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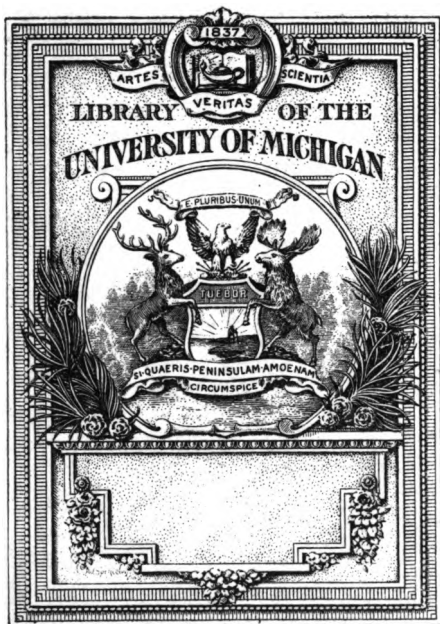
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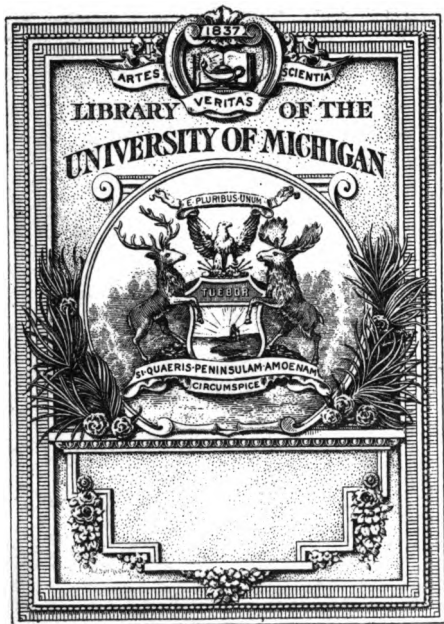
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CALENDAR

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1899-1900



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ERRATA.

Page 10, line 12. For HENRY C. CARHART read HENRY S. CARHART

Page 34, lines 17 and 18. For Physiological read *Psychological*.

Page 96, line 3 from bottom. For Semeseer read *Semester*.

Page 188, last line. For Philosophy read *Physiology*.

ANN ARBOR
COURIER OFFICE, PRINTERS AND BINDERS
1900

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ANNOUNCEMENTS FOR 1900-1901.

1900.

- Jan. 9. University Exercises resumed after Holiday Vacation.
- Feb. 9. (Evening.) FIRST SEMESTER CLOSES.
- Feb. 12. SECOND SEMESTER BEGINS.
- April 13. (Evening.) Recess begins, ending April 23 (evening).
- June 17. *Baccalaureate Address.*
- June 19. *Class Day.*
- June 20. *Alumni Day.*
- June 21. COMMENCEMENT IN ALL DEPARTMENTS OF THE UNIVERSITY. The Commencement Oration is to be delivered by JOHN MERLE COULTER, Ph.D., Professor in the University of Chicago.
- June 23-Sept. 25. SUMMER VACATION.
- June 25-Aug. 17. Session of Summer School of Law.
- July 2-Aug. 11. Summer Session of the Department of Literature, Science, and the Arts.
- Sept. 20-22. *Examination for Admission to the Department of Literature, Science, and the Arts, to the Department of Engineering, to the Department of Medicine and Surgery, and to the School of Pharmacy.*
- Sept. 21-24. *Examination for Admission to the Department of Law.*
- Sept. 22. *Examination for Admission to the College of Dental Surgery.*
- Sept. 24. *Examination for Admission to the Homœopathic Medical College.*
- Sept. 25. FIRST SEMESTER BEGINS IN ALL DEPARTMENTS OF THE UNIVERSITY.
- Nov. —. Thanksgiving Recess of three days, beginning Tuesday evening, in all Departments of the University.
- Dec. 21. (Evening.) Holiday Vacation begins in all Departments.

1901.

- Jan. 8. Exercises resumed.
- Feb. 8. (Evening.) FIRST SEMESTER CLOSES.
- Feb. 11. SECOND SEMESTER BEGINS.
- April 12. (Evening.) Recess begins, ending April 22 (evening).
- June 20. COMMENCEMENT IN ALL DEPARTMENTS OF THE UNIVERSITY.

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* Professor Hempl is also temporarily in charge of the Department of German.

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of the Histological Laboratory, and Secretary of the Faculty of
the Department of Medicine and Surgery. 333 East Ann Street.
- JOHN O. REED, PH.D., *Junior Professor of Physics.*
731 South Twelfth Street.
- ALFRED H. LLOYD, PH.D., *Junior Professor of Philosophy.*
1503 Washtenaw Avenue.
- PAUL R. DE PONT, A.B., B.S., *Assistant Professor of French,*
Registrar of the Department of Literature, Science, and the Arts,
and Registrar of the Department of Engineering.
509 East Jefferson Street.
- JOSEPH H. DRAKE, A.B., *Assistant Professor of Latin.*
632 Forest Avenue.
- ALVISO B. STEVENS, PH.C., *Assistant Professor of Pharmacy.*
915 Oakland Avenue.
- *DEAN C. WORCESTER, A.B., *Assistant Professor of Zoology*
and Curator of the Zoological Museum.
- JOSEPH L. MARKLEY, PH.D., *Assistant Professor of Mathematics.*
912 Forest Avenue.
- MAX WINKLER, PH.D., *Assistant Professor of German.*
1328 Washtenaw Avenue.
- MORITZ LEVI, A.B., *Assistant Professor of French.* Israel Avenue.
- JULIUS O. SCHLOTTERBECK, PH.C., PH.D., *Assistant Profes-*
sor of Pharmacognosy and Botany. Israel Avenue.
- ERNST H. MENSEL, PH.D., *Assistant Professor of German.*
721 Monroe Street.
- EARLE W. DOW, A.B., *Assistant Professor of History.*
544 Thompson Street.
- CHARLES H. COOLEY, PH.D., *Assistant Professor of Sociology.*
534 South State Street.
-

* Absent on leave.

- ALDRED S. WARTHIN, PH.D., M.D., *Assistant Professor of Pathology in the Department of Medicine and Surgery.*
721 Monroe Street.
- LOUIS P. HALL, D.D.S., *Assistant Professor of Dental Anatomy, Operative Technique, and Clinical Operative Dentistry.*
1502 Hill Street.
- MOSES GOMBERG, Sc.D., *Assistant Professor of Organic Chemistry.*
1101 East University Avenue.
- WILLIAM F. BREAKEY, M.D., *Lecturer on Dermatology.*
402 East Huron Street.
- GEORGE O. HIGLEY, M.S., *Instructor in General Chemistry.*
928 Olivia Place.
- DAVID M. LICHTY, M.S., *Instructor in General Chemistry.*
922 Olivia Place.
- JOHN R. EFFINGER, JR., PH.D., *Instructor in French.*
1430 Hill Street.
- CLARENCE G. WRENTMORE, M.S., *Instructor in Descriptive Geometry and Drawing.*
520 Packard Street.
- KARL E. GUTHE, PH.D., *Instructor in Physics.*
904 South State Street.
- TOBIAS DIEKHOFF, PH.D., *Instructor in German.*
512 Packard Street.
- CLARENCE L. MEADER, A.B., *Instructor in Latin.*
627 South Thayer Street.
- ARTHUR G. HALL, B.S., *Instructor in Mathematics.*
1036 Oakland Avenue.
- GEORGE REBEC, PH.D., *Instructor in Philosophy.*
1817 Geddes Avenue.
- JAMES W. GLOVER, PH.D., *Instructor in Mathematics.*
600 East Kingsley Street.
- LOUIS A. STRAUSS, PH.M., *Instructor in English.*
714 East University Avenue.
- EDWIN C. GODDARD, PH.B., LL.B., *Instructor in Mathematics.*
1308 Geddes Avenue.
- HERBERT J. GOULDING, B.S., *Instructor in Descriptive Geometry and Drawing.*
520 Packard Street.
- *VICTOR E. FRANCOIS, *Instructor in French.*
- PERRY F. TROWBRIDGE, PH.B., *Instructor in Organic Chemistry and Accountant in the Chemical Laboratory.*
226 Observatory Street.
-

* Absent on leave.

- JOSEPH H. VANCE, LL.B., *Assistant Law Librarian.*
Ann Arbor Town.
HAMILTON REEVE, *Superintendent of Buildings and Grounds.*
610 South State Street.

Non-Resident Lecturers on Special Topics for 1899-1900.

- JOHN B. CLAYBERG, LL.B., *Lecturer on Mining Law.*
Helena, Montana.
MELVILLE M. BIGELOW, PH.D., *Lecturer on Insurance.*
Cambridge, Mass.
HENRY H. SWAN, A.M., *Lecturer on Admiralty Law.* Detroit.
OSCAR R. LONG, M.D., *Lecturer on Mental Diseases in the Homœopathic Medical College.* Ionia.
FRANK F. REED, A.B., *Lecturer on Copyright Law.* Chicago, Ill.
ALBERT H. WALKER, LL.B., *Lecturer on Patent Law.*
New York, N. Y.
WILLIAM M. EDWARDS, M.D., *Lecturer on Mental Diseases in the Department of Medicine and Surgery.* Kalamazoo.
EDMUND A. CHRISTIAN, A.B., M.D., *Lecturer on Mental Diseases in the Department of Medicine and Surgery.* Pontiac.
JAMES D. MUNSON, M.D., *Lecturer on Mental Diseases in the Department of Medicine and Surgery.* Traverse City.
HENRY B. BAKER, A.M., M.D., *Lecturer on the Administration of Health Laws.* Lansing.
WILLIAM A. POLGLASE, M.D., *Lecturer on the Theory and Practice of Medicine, and on Nervous Diseases, in the Homœopathic Medical College.* Lapeer.
DALLAS BOUDEMAN, M.S., *Lecturer on Michigan Statutes in the Department of Law.* Kalamazoo.

Other Appointments for 1899-1900.

- KEENE FITZPATRICK, *Director of the Gymnasium.*
1227 South University Avenue.
JOHN R. ALLEN, M.E., *Assistant Professor of Mechanical Engineering.*
226 South Ingalls Street.
BENJAMIN P. BOURLAND, PH.D., *Assistant Professor of French.*
544 Thompson Street.
WILLIAM L. MIGGETT, B.S., *Superintendent of Engineering Shops.*
420 South Fifth Avenue.

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- VICTOR C. VAUGHAN, PH.D., Sc.D., M.D., *Lecturer on Toxicology in its Legal Relations in the Department of Law.*
221 South State Street.
- HENRY C. ADAMS, LL.D., *Lecturer on the Railroad Problem in the Department of Law.*
1421 Hill Street.
- ANDREW C. McLAUGHLIN, A.M., LL.B., *Lecturer on Constitutional Law and Constitutional History in the Department of Law.*
836 Tappan Street.
- RICHARD HUDSON, A.M., *Lecturer on Comparative Constitutional Law in the Department of Law.*
1023 Oakland Avenue.
- WILLIAM J. HERDMAN, M.D., LL.D., *Lecturer on Neurology, Electrology, and Railroad Injuries in the Department of Law.*
328 East Huron Street.
- JOSEPH H. DRAKE, A.B., *Lecturer on Roman Law in the Department of Law.*
632 Forest Avenue.
- SIMON M. YUTZY, M.D., *Instructor in Anatomy and Demonstrator of Anatomy.*
326 South State Street.
- JOHN W. DWYER, LL.M., *Instructor in Law.*
721 East Kingsley Street.
- WILLIAM H. WAIT, PH.D., *Instructor in Greek, Latin, and Sanskrit.*
904 Olivia Place.
- HERBERT H. WAITE, A.B., *Instructor in Bacteriology, and Dispensing Clerk in the Hygienic Laboratory.*
709 North University Avenue.
- WARREN W. FLORES, PH.D., *Instructor in German.*
517 East Washington Street.
- WALTER B. PILLSBURY, PH.D., *Instructor in Psychology.*
539 Forest Avenue.
- ALBERT J. FARRAH, LL.B., *Instructor in Law.*
507 Lawrence Street.
- EDWIN C. ROEDDER, PH.D., *Instructor in German.*
425 Church Street.
- ALFRED H. WHITE, A.B., *Instructor in Chemical Technology.*
413 East Liberty Street.
- CARROLL D. JONES, E.E., *Instructor in Electrical Engineering.*
126 Packard Street.
- JOHN S. P. TATLOCK, A.M., *Instructor in English.*
306 North Division Street.
- * FANNY E. LANGDON, M.S., *Instructor in Zoology.*
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* Died October 21, 1899.

- ALICE G. SNYDER, *Instructor in the Women's Gymnasium.*
307 North State Street.
- S. LAWRENCE BIGELOW, PH.D., *Instructor in General Chemistry.*
321 South Division Street.
- JAMES B. POLLOCK, Sc.D., *Instructor in Botany.*
523 Packard Street.
- EWALD BOUCKE, PH.D., *Instructor in German.*
808 South State Street.
- AUGUSTUS TROWBRIDGE, PH.D., *Instructor in Physics.*
812 East Catherine Street.
- WILLIAM H. BUTTS, A.M., *Instructor in Mathematics.*
927 Cornwell Place.
- JULIA W. SNOW, PH.D., *Instructor in Botany.*
605 South Thayer Street.
- JOHN R. ROOD, LL.B., *Instructor in Law.* 1133 Forest Avenue.
- SHIRLEY W. SMITH, B.L., *Instructor in English.*
924 Forest Avenue.
- HUGO P. THIEME, PH.D., *Instructor in French.*
1209 East University Avenue.
- GEORGE L. GRIMES, B.S., *Instructor in Mechanical Engineering.*
214 South Thayer Street.
- CARL V. TOWER, PH.D., *Instructor in Philosophy.*
1024 Hill Street.
- HERBERT S. JENNINGS, PH.D., *Instructor in Zoology.*
620 South State Street.
- THOMAS E. OLIVER, PH.D., *Instructor in French.*
1328 Washtenaw Avenue.
- HERBERT F. DECOU, A.M., *Instructor in Greek.*
1118 South University Avenue.
- CHRISTIAN F. GAUSS, A.M., *Instructor in French.*
1000 East Ann Street.
- JAMES R. ARNEILL, A.B., M.D., *Instructor in Clinical Medicine in the Department of Medicine and Surgery.*
709 North University Avenue.
- HENRY A. SANDERS, PH.D., *Instructor in Latin.*
633 Church Street.
- BENJAMIN F. BAILEY, B.S., *Instructor in Electrotherapeutics.*
237 South Ingalls Street.
- ROBERT C. BOURLAND, A.B., M.D., *Instructor in Anatomy.*
803 East Kingsley Street.

- EUGENE C. SULLIVAN, PH.D., *Instructor in Analytical Chemistry.* 331 Packard Street.
- HENRY C. ANDERSON, M.E., *Instructor in Mechanical Engineering.* 425 South Division Street.
- ARTHUR L. CROSS, PH.D., *Instructor in History.* 610 South State Street.
- GEORGE A. HULETT, PH.D., *Instructor in General Chemistry.* 706 South Thayer Street.
- SAMUEL J. HOLMES, PH.D., *Instructor in Zoology.* 324 East Liberty Street.
- JONATHAN A. C. HILDNER, PH.D., *Instructor in German.* 214 Packard Street.
- JOHN DIETERLE, A.B., *Instructor in German.* 221 West Liberty Street.
- CHARLES M. WILLIAMS, *Instructor in the Waterman Gymnasium.* 1214 Washtenaw Avenue.
- KARL W. GENTHE, PH.D., *Instructor in Zoology.* 1735 Washtenaw Avenue.
- ALICE L. HUNT, *Instructor in Drawing.* 218 South Thayer Street.
- *CHARLES BAIRD, A.B., *Director of Outdoor Athletics.* 1132 Washtenaw Avenue.
- JAMES G. LYND, M.D., *Demonstrator of Obstetrics and Diseases of Women.* 227 South State Street.
- FRED P. JORDAN, A.B., *Assistant in the General Library in Charge of Catalogue.* 923 Olivia Place.
- CYRENUS G. DARLING, M.D., *Lecturer on Genito-urinary and Minor Surgery and Demonstrator of Surgery in the Department of Medicine and Surgery, and Clinical Lecturer on Oral Pathology and Surgery in the College of Dental Surgery.* 620 East University Avenue.
- BYRON A. FINNEY, A.B., *Assistant in the General Library in Charge of Circulation.* 849 Tappan Street.
- JAMES P. BRIGGS, PH.C., *Pharmacist in the University Hospital.* 712 East Catherine Street.
- JEANNE C. SOLIS, M.D., *Demonstrator of Nervous Diseases in the Department of Medicine and Surgery.* 709 West Huron Street.
- NORMAN A. WOOD, *Taxidermist.* 1216 South University Avenue.
- D. MURRAY COWIE, M.D., *Assistant in Internal Medicine in the Department of Medicine and Surgery.* 546 Packard Street.
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* From January 1, 1900.

- AUGUSTUS E. GUENTHER, B.S., *Assistant in Physiology.*
507 Elm Street.
- CHARLES L. BLISS, B.S., *Assistant in Physiological Chemistry.*
413 South Division Street.
- HARRY W. CLARK, B.S., *Superintendent of the University Hospital.*
1132 East Catherine Street.
- GEORGE B. WALLACE, M.D., *Assistant in Pharmacology in the Department of Medicine and Surgery.* 1021 East Huron Street.
- WILLIAM A. SPITZLEY, A.B., M.D., *First Assistant in Surgery in the Department of Medicine and Surgery.*
324 South State Street.
- HENRY O. SEVERANCE, A.M., *Assistant in the General Library.*
509 South Fifth Avenue.
- THEOPHIL KLINGMANN, Ph.C., M.D., *Assistant to the Professor of the Diseases of the Mind and Nervous System and Electrotherapeutics in the Department of Medicine and Surgery.*
526 South Ashley Street.
- HERBERT E. SARGENT, B.S., *Curator of the Museum.*
609 Monroe Street.
- HENRY H. PARKE, B.L., *Assistant in Zoology.* 421 Church Street.
- THOMAS B. COOLEY, A.B., M.D., *Assistant in Hygiene.*
534 South State Street.
- HAROLD M. DOOLITTLE, *Assistant Demonstrator of Anatomy.*
1021 East Huron Street.
- JAMES F. BREAKEY, M.D., *Assistant in Dermatology.*
515 East Jefferson Street.
- LYDIA M. DEWITT, B.S., M.D., *Assistant in Histology.*
614 East Liberty Street.
- FRANK S. BACHELDER, *Assistant in Zoology.*
548 South State Street.
- ROBERT B. HOWELL, D.D.S., *Demonstrator of Mechanical Technique in the College of Dental Surgery.*
907 North University Avenue.
- NORMAN K. MCINNIS, A.M., *Assistant in English.*
1000 East Ann Street.
- FREDERICK A. BALDWIN, M.D., *Assistant in Pathology in the Department of Medicine and Surgery.* 211 South Ingalls Street.
- FREDERICK J. WILBUR, *Assistant in Astronomy.*
407 East University Avenue.
- RAYMOND H. POND, M.S., *Assistant in Plant Physiology.*
332 Maynard Street.

- HELEN BENDER, *Assistant in the Women's Gymnasium.*
1224 Washtenaw Avenue.
- ALFRED E. LINDAU, *Assistant to the Dean of the Department of Engineering.*
712 East Kingsley Street.
- CHARLES W. JOHNSON, Ph.C., *Assistant in Qualitative Chemistry.*
328 South Fourth Avenue.
- LEON J. COLE, *Assistant in Zoology.*
703 Church Street.
- ROBERT L. JOHNSON, M.D., *Superintendent of the University Hospital (Homœopathic).*
508 East Liberty Street.
- CORA J. BECKWITH, *Assistant in Zoology.*
703 Church Street.
- ALPHONSO M. CLOVER, B.S., *Assistant in General Chemistry.*
413 South Division Street.
- GEORGE H. ALLEN, A.M., *Assistant in Latin.*
522 Monroe Street.
- HENRY W. HARVEY, D.D.S., *Assistant in Clinical, Operative, and Prosthetic Dentistry.*
1013 Monroe Street.
- WILLARD H. HUTCHINGS, B.L., M.D., *Second Assistant in Surgery in the Department of Medicine and Surgery.*
521 Monroe Street.
- JOHN J. MERSEN, A.M., M.D., *Assistant to the Bates Professor of the Diseases of Women and Children in the Department of Medicine and Surgery.*
129 Fourteenth Street.
- ARTHUR E. GALE, M.D., *Assistant in Internal Medicine in the Department of Medicine and Surgery.*
815 East Huron Street.
- EDWARD A. WILLIS, *Assistant Demonstrator of Anatomy.*
1114 South University Avenue.
- AUGUSTUS HOLM, *Assistant Demonstrator of Anatomy.*
432 South Division Street.
- GERTRUDE FELKER, A.B., *Assistant Demonstrator of Anatomy.*
727 East University Avenue.
- CONRAD GEORG, A.B., M.D., *Interne in the University Hospital.*
University Hospital.
- ROY B. CANFIELD, A.B., M.D., *Assistant to the Professor of Ophthalmic and Aural Surgery in the Department of Medicine and Surgery.*
727 East Kingsley Street.
- DEAN W. MYERS, M.D., *Assistant to the Professor of the Theory and Practice of Medicine, and to the Professor of Ophthalmology, Otology, and Pedology in the Homœopathic Medical College.*
432 Maynard Street.
- HARVEY M. PIPER, M.D., *House Physician in the University Hospital (Homœopathic).*
University Hospital (Homœopathic).

- FLOYD E. WESTFALL, M.D., *House Physician in the University Hospital (Homœopathic).* University Hospital (Homœopathic),
 OVIDUS A. GRIFFIN, B.S., M.D., *Demonstrator of Ophthalmology and Otology in the Department of Medicine and Surgery.*
 812 East Washington Street.
 JOHN W. SLAUGHTER, A.B., B.D., *Assistant in Psychology.*
 326 South Fifth Avenue.
 CHARLES SIMONS, B.L., *Assistant in Elocution.*
 609 Monroe Street.
 HARRIE N. COLE, *Assistant in Qualitative Chemistry.*
 703 Church Street.
 FRED L. WOODS, *Assistant in Quantitative Analysis.*
 1209 Geddes Avenue.
 GEORGE M. HEATH, Ph.C., *Assistant in Pharmacy.*
 316 East Madison Street.
 NORMAN F. HARRIMAN, *Assistant in Chemical Technology.*
 1025 Spring Street.
 HARRY M. GORDIN, Ph.D., *Assistant in Chemical Research.*
 219 Packard Street.
 RAYMOND A. CLIFFORD, M.D., *Assistant to the Professor of Surgery in the Homœopathic Medical College.*
 707 North University Avenue.
 RAYMOND PEARL, A.B., *Assistant in Zoology.* 549 Packard Street.
 CHARLES M. BRIGGS, *Assistant in Clinical, Operative, and Prosthetic Dentistry.*
 514 East Liberty Street.
 MARY A. GODDARD, *Assistant in Botany.* 1308 Geddes Avenue.
 ELMA CHANDLER, *Assistant in Botany.* 1308 Geddes Avenue.
 HOWARD S. REED, *Assistant in the Botanical Laboratory.*
 215 East William Street.
 HOWARD B. BISHOP, *Laboratory Assistant in General Chemistry.*
 608 East Jefferson Street.
 ARTHUR M. LINDAUER, *Assistant in Organic Chemistry.*
 711 East Catherine Street.
 LOUALLEN F. MILLER, B.S., *Dispensing Clerk in the Electro-therapeutical Laboratory.*
 300 East Jefferson Street.
 ALICE S. HUSSEY, A.M., *Assistant in English.* 923 Olivia Place.
 PAUL I. MURRILL, Ph.D., *Assistant for Research in Pharmacognosy.*
 804 Monroe Street.
 WALTER D. HADZSITS, A.M., *Assistant in Latin.*
 819 South State Street.

RICHARD D. T. HOLLISTER, *Assistant in the Museum.*

1017 East Catherine Street.

WILLIAM D. MUELLER, M.D., *Interne in the University Hos-
pital.*

University Hospital.

GEORGE F. YOUNG, M.D., *Interne in the University Hospital.*

University Hospital.

JAMES GOSTANIAN, M.D., *Interne in the University Hospital.*

University Hospital.

UNIVERSITY OF MICHIGAN.

THE UNIVERSITY AND THE STATE,

THE University of Michigan is a part of the public educational system of the State. The governing body of the institution is a Board of Regents, elected by popular vote for terms of eight years, as provided in the Constitution of the State. In accordance with the law of the State, the University aims to complete and crown the work that is begun in the public schools, by furnishing ample facilities for liberal education in literature, science, and the arts, and for thorough professional study of engineering, medicine, pharmacy, law, and dentistry. Through the aid that has been received from the United States and from the State, it is enabled to offer its privileges, with only moderate charges, to all persons of either sex, who are qualified for admission. While Michigan has endowed her University primarily for the higher education of her own sons and daughters, it must be understood that she also opens the doors of the institution to all students, wherever their homes. It is in this broad, generous, and hospitable spirit, that the University has been founded, and that it endeavors to do its work.

ORGANIZATION OF THE UNIVERSITY.

The University comprises the Department of Literature, Science, and the Arts (including the Graduate School and a Summer School), the Department of Engineering, the Department of Medicine and Surgery, the Department of Law (including a Summer School), the School of Pharmacy, the Homœopathic Medical College, and the College of Dental Surgery. Each department, school, and college, has its special

Faculty. The University Senate is a body representing all the faculties, and considers questions of common interest and importance.

In the Department of Literature, Science, and the Arts, different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, and Bachelor of Letters, the corresponding Masters' degrees, and the degrees of Doctor of Philosophy and Doctor of Science.

In the professional schools degrees are given as follows: In the Department of Engineering, the degrees of Bachelor of Science, Master of Science, Civil Engineer, Mechanical Engineer, and Electrical Engineer; in the Department of Medicine and Surgery, the degree of Doctor of Medicine; in the Department of Law, the degrees of Bachelor of Laws and Master of Laws; in the School of Pharmacy, the degrees of Pharmaceutical Chemist and Bachelor of Science; in the Homœopathic Medical College, the degree of Doctor of Medicine; in the College of Dental Surgery, the degrees of Doctor of Dental Surgery and Doctor of Dental Science.

Students in any department of the University may enter the classes in any other department, upon obtaining permission from the faculties of the respective departments.

THE LIBRARIES.

The libraries of the University are the General Library, the Medical Library, the Law Library, the Homœopathic Library, and the Dental Library. They contained in the aggregate, June 30, 1899, 133,206 volumes and 1,530 maps.*

THE GENERAL LIBRARY contains 105,279 volumes and 1,530 maps. This library includes the following special collections: Parsons Library (political economy), 4,325 volumes and 5,000 pamphlets; McMillan Shakespeare Library, 4,825 volumes; Hagerman Collection (history and political science), 2,660 volumes; Goethe Library, 952 volumes; Dorsch Library (miscellaneous), 1,676 volumes and 148 pamphlets.

Seven hundred and seventy-five periodicals are received.

The catalogue of the library is the usual card catalogue of authors and subjects.

Members of the faculties and other officers of the University may draw books from the library, subject to certain restrictions. To all other persons it is a reference library. The reading room for general use will seat 210 readers. Separate rooms are provided for advanced students where work is pursued with the necessary books at hand.

The library is open for consultation fourteen hours daily during the

* Owing to a change in the method of disposing of the unbound pamphlets, they are not included in this year's enumeration, except in the special collections.

academic year, nine hours daily during the six weeks of the Summer Schools, and six hours daily from the close of the Summer Schools until the end of the summer vacation. The only exceptions to the above are Sundays and legal holidays.

The income of the FORD-MESSER BEQUEST of \$20,000 and of the COYL BEQUEST of \$10,000, is used for the increase of the General Library.

THE MEDICAL LIBRARY, containing 9,614 volumes, is shelved with the General Library, and is consulted under the same regulations. One hundred and forty-five medical journals are regularly received.

THE LAW LIBRARY, containing 16,334 volumes, occupies the large room on the second floor of the new law building.

THE LIBRARY OF THE HOMEOPATHIC MEDICAL COLLEGE is shelved with the General Library and is subject to the same regulations. It contains 1,082 volumes. Twenty periodicals are regularly received.

THE LIBRARY OF THE COLLEGE OF DENTAL SURGERY is shelved in a room in the dental building. It contains several sets of valuable periodicals and many of the most important treatises on the theory and practice of dentistry. The whole number of volumes is 895. Thirteen dental periodicals are taken.

THE ASTRONOMICAL OBSERVATORY.

The Observatory is known as the Detroit Observatory, having been founded through the liberality of citizens of Detroit. Valuable additions and improvements have been made by contributions from several sources. The building consists of a main part, with a movable dome, and two wings. The meridian circle in the east wing was presented by Mr. Henry N. Walker, of Detroit. It was constructed by Pistor & Martins, of Berlin. In the main part are mounted clocks by Tiede and Howard. The west wing contains the observatory library, which connects with the residence of the Director. The refracting telescope, mounted in the dome, has an object glass thirteen inches in diameter. It was constructed by the late Henry Fitz, of New York.

A small observatory near the main building is used in the work of instruction. It contains an equatorial telescope of six inches aperture, and a transit instrument of three inches aperture, with zenith telescope attachment.

THE MUSEUMS.

The University Museums contain collections illustrative of natural history, the industrial arts, chemistry, materia medica, anatomy, archæology, ethnology, the fine arts, and history, arranged in such a way as to render them accessible both to students and to visitors. The University

affords a secure depository for objects of value and curiosity, and it is hoped that frequent gifts will be made to its several museums.

The museum building contains the collections in zoology and geology, the industrial arts, archæology and ethnology, the Chinese exhibit, and the Stearns Collection of musical instruments. The mineral collection is kept in Tappan Hall, and the herbaria are cared for at the botanical laboratory. The collections of works of art, including historical medallions and coins, are in the art gallery in the library building.

The following descriptions indicate the character of some of the collections belonging to the University. The collections especially used for instruction in medicine and in dentistry will be found described in the chapters devoted to the medical and dental departments.

NATURAL HISTORY.

I. THE MINERALOGICAL COLLECTION comprises about 6,000 specimens. It embraces about 2,500 specimens (principally European) purchased of the late BARON LEDERER, and known as the LEDERER COLLECTION; and, besides others, a rich collection of the MINERAL SPECIES OF MICHIGAN, including all varieties of copper ore and associated minerals from the Lake Superior mining region.

II. THE GEOLOGICAL COLLECTION consists of:

1. The large series of lithological and palæontological specimens brought together by the State geological survey, of which over a hundred fossil species have become the types of original descriptions.

2. THE WHITE COLLECTION, consisting of 1,018 distinct entries, 6,000 specimens, of invertebrate fossils.

3. THE ROMINGER COLLECTION, embracing about 5,000 species of invertebrate fossils, represented by at least 25,000 specimens. The collection contains (1) the types of all the palæozoic corals described by Dr. Rominger in the Geological Report of Michigan, volume iii,—not alone the specimens figured, but numerous specimens of each species, which are not duplicates, but illustrations of different characters and varieties; (2) a collection of *Stromatoporoids*—probably the largest and finest in the world; (3) a similar collection of *Bryozoa*; (4) palæozoic fossils belonging to all the other classes; (5) European fossils of all classes and ages in large number—the sponges forming, with the American specimens, a collection of great interest. Since the purchase of this collection by the University, Dr. Rominger has added to it more than 250 species of invertebrate fossils, represented approximately by 1,000 specimens, among which there are many of great value.

4. SMITHSONIAN DEPOSITS, consisting, for the present, of a collection of specimens of foreign and domestic building stones, and twenty-three specimens of fossils from the Upper Missouri.

5. MISCELLANEOUS DONATIONS, COLLECTIONS, AND PURCHASES, including a series illustrative of the metalliferous regions of the Upper Peninsula, collected by the late Professor Alexander Winchell; an interesting collection of fossils, chiefly Cretaceous, from the Yellowstone Valley, presented by the late General Custer, U. S. A.; and a series of six to eight hundred rock species and varieties from the Drift of Ann Arbor, collected, dressed to standard size and form, and presented by the late Miss Eliza J. Patterson. A collection of 150 specimens of ores and rocks has recently been presented by the U. S. National Museum.

The entire collection, the larger portion of which consists of invertebrate fossils, is estimated to contain approximately 17,000 entries and about 60,000 specimens.

III. THE ZOOLOGICAL COLLECTIONS are very large. They comprise a series illustrative of the fauna of Michigan and other northern and western States; a collection of the animals of the Pacific Coast made by Lieutenant Trowbridge; many valuable specimens collected in the Philippine Islands by Dr. Joseph B. Steere in the years 1887 and 1888; and specimens from other foreign countries obtained through the medium of the Smithsonian Institution.

The Bird Collection includes 3669 skins and 1478 mounted specimens. A series of groups illustrative of special facts, such as protective coloration, albinism, parasitism, individual variation, dichromatism, difference in plumage correlated with age, season, sex, etc., has been recently installed, and a second series illustrative of the life history of typical representatives of the several orders of birds is in process of installation. In all these groups natural surroundings are reproduced in detail.

The Collection of Alcoholic Material includes a fine series of invertebrate types, as well as many interesting vertebrates and a considerable number of anatomical preparations. It is stored in a darkened room. Special protection against fire is afforded by a system of overhead sprays, while an inclined waterproof floor, discharging on the outside of the building, makes it possible to flood the alcoholic room without causing damage on the floors below.

The collection of land, fresh water, and marine shells includes some 8,000 species, many of which are represented by fine series of specimens.

Card catalogues, showing the exact place of every specimen, make the collections of birds and alcoholics readily accessible.

THE BEAL-STEERE ZOOLOGICAL COLLECTION, made by Dr. Joseph B. Steere in the years 1870 to 1876, comprises numerous corals, shells, insects, birds, and mammals from South America, China, Formosa, the Philippines, and the Moluccas.

IV. THE BOTANICAL COLLECTION contains, in addition to Michigan

plants collected by the public surveys, several valuable herbaria and sets of plants that have been presented to the University from time to time. Among these some of the most important are the HOUGHTON HERBARIUM, the SAGER HERBARIUM, the AMES HERBARIUM, the HARRINGTON COLLECTION, the BEAL-STEERE BOTANICAL COLLECTION, the ADAMS-JEWETT COLLECTION, and the GARRIGUES COLLECTION, all of which have been described in Calendars of previous years.

Among the more recent acquisitions are Collins, Holden, and Setchell's Phycotheca Boreali-Americana, Briosi and Cava's Funghi Parasiti, Seymour and Earle's Economic Fungi, Ellis's North American Fungi, presented by Mr. Joseph B. Whittier, and large additions to the cryptogamic flora of Michigan, arranged and catalogued by the late Mr. Lorenzo N. Johnson.

In addition to these *exsiccati*, there is an extensive collection of material mounted in alcohol or formalin in museum jars, illustrating the biological relations of plants.

CHINESE EXHIBIT.

In 1885 the Chinese Government presented to the University the exhibit which it sent to the New Orleans Exposition. The collection, numbering several thousand specimens, is on exhibition in one of the rooms of the museum building. It illustrates with special fulness the varieties of Chinese cotton, the Chinese processes of manufacturing cotton, and the finished products of cotton and silk. There are many articles showing the skill of the Chinese in working in wood, in ivory, and in porcelain, in embroidery, and in painting on glass and on silk.

CHEMISTRY AND PHARMACOGNOSY.

THE MUSEUM OF APPLIED CHEMISTRY occupies a floor space of 2,500 square feet in the chemical building, and embraces collections as follows:

1. *Vegetables and other Organic Products.*—This collection comprises a series of vegetable products from all parts of the world, such as are used for medicine, food, or industrial purposes, arranged according to the natural orders of plants, and accompanied by colored plates and models of the plants which furnish the products. A series of chemical preparations shows the relative quantities of the several useful constituents in the plants, such as medicinal principles, nutrient substances, varnish resins, color compounds, tanning agents, oils, perfumes, etc. There is also a set of drawings of microscopical structure intended to aid in the detection of falsifications of foods and other articles of use. The production and the commerce of these articles among the various peoples of the earth are also illustrated. There are also groups of exhibits to

show processes of modern manufactures by organic chemical synthesis; and facilities for the study of the beet-sugar industry are especially provided.

2. *Chemical Industry.*—In this collection the natural resources and chief manufactures of Michigan, and of various parts of the world, are illustrated. Crude materials, raw and unfinished products, and completed articles of commerce in their several grades are displayed, together with models and plans of production by modern methods. Among the branches of technical industry so illustrated are works for the production of alkalis, acids, soaps, distillates, starches, oils, dyes and pigments, petroleum products, and clay wares, as well as the useful and the precious metals.

ARCHÆOLOGY AND ETHNOLOGY.

This department contains a collection of the arms, agricultural implements, carpenter's tools, musical instruments, and idols of the Chinese, belonging to the BEAL-STEERE COLLECTION, together with many articles of domestic and war-like use among the North American Indians and the Islands of the South Pacific, numerous remains of the ancient Peruvians, and many specimens of clothing, art, etc., of the American Indians, modern Peruvians, Formosans, and natives of the East Indies and Alaska. The Chinese Exhibit above referred to contains a large number of articles illustrative of ethnology. From the Smithsonian Institution there have been received a comprehensive collection of casts of objects from Europe and from the mounds of the Ohio valley, and a fine collection of pottery from the cliff dwellings of New Mexico and Arizona. The valuable collection made by the late David DePue, mostly from Washtenaw County, Mich., and a collection of flint implements from Denmark, have recently been added.

THE FINE ARTS AND HISTORY.

The works of art belonging to the University are on exhibition in the galleries provided for them in the library building. A printed catalogue, prepared by Professor Martin L. D'Ooge, contains fuller descriptions than can here be given. The collection was begun in 1855. It contains a gallery of casts, in full size and in reduction, of some of the most valuable ancient statues and busts, such as the Apollo Belvedere, the Laocoon, and the Sophocles; more than two hundred reductions and models in terra cotta and other materials; the statue of Nydia by Randolph Rogers; casts of modern statues, busts, etc., and reliefs; a number of engravings and photographic views, illustrating especially the architectural and sculptural remains of Ancient Italy and Greece; a small collection of engraved copies of the great masterpieces of modern painting; two series of historical medallions—the HORACE WHITE COLLEC-

TION, and the GOVERNOR BAGLEY COLLECTION—the former illustrative of ancient, mediæval and modern European history, the latter designed to embrace the commemorative medals struck by order of Congress or other authorities, and now containing one hundred such medals; and a large collection of coins, chiefly Greek and Roman, presented to the University by the late Dr. Abraham E. Richards.

The ROGERS GALLERY comprises the entire collection of the original casts of the works of the late Randolph Rogers, more than a hundred in number. It was given by that distinguished sculptor to the State of Michigan for the University museum.

The late Henry C. Lewis, of Coldwater, bequeathed to the University his valuable collection of works of art, comprising about four hundred and fifty paintings and forty pieces of statuary. This collection has been placed provisionally in the art gallery, where, however, it cannot be exhibited to advantage for lack of room.

Mr. Frederick Stearns, of Detroit, has recently given to the University a large and valuable collection of musical instruments illustrating the history of music and the progress of musical art. This collection is on exhibition in the museum building.

Through the generosity of Mr. Henry P. Glover, of Ypsilanti, the University has recently acquired possession of the valuable De Criscio collection of Latin inscriptions, about 250 in number, ranging in age from the reign of Augustus to the 5th century A. D. The most of the inscriptions are on slabs of marble.

THE LABORATORIES.

In the several laboratories of the University opportunities are provided for practical instruction in physics, chemistry, geology, zoology, psychology, botany, engineering, histology, physiology, hygiene, electrotherapeutics, pathology, anatomy, and dentistry. The laboratories designed primarily for students of engineering, of medicine, and of dentistry are described in the chapters devoted to the engineering, the medical, and the dental departments.

THE PHYSICAL LABORATORY.

The basement of the physical laboratory has a German rock-asphaltum floor, with heavy stone-capped piers in every work room, and is devoted entirely to experimental work in electricity and magnetism. The dynamo room contains a 50 H. P. electric motor with countershaft and friction clutch, an Edison shunt-wound dynamo of 5,000 watts capacity, a Sperry and a Brush 10-arc-light machine, with lamps for both,

a Gramme machine of 5,000 watts made in 1877, a Fort Wayne 30 K. W. alternator, with converters and all the appliances for a complete alternating plant, a Fisher 225-light constant-potential machine, a floating dynamometer, and a 1,500 watt universal alternator for laboratory purposes. In an adjacent room are placed electro-dynamometers, ammeters, voltmeters, a wall resistance of iron wire constructed to absorb about 35 H. P. of electrical energy, and a bank of 225 incandescent lamps. The photometric room, with blackened walls, and lighted only artificially, is also adjacent to the engine room.

A battery room well ventilated and lighted, and supplied with water, contains a large storage battery. Five smaller work rooms are fitted with the usual appliances for electrical measurements.

On the first floor are a commodious lecture room, an apparatus room, a general laboratory for elementary work, a balance room, a mercury room, and two rooms for a private laboratory.

The laboratory is supplied with the most modern apparatus from the best American and European makers. In sound, it includes tuning forks and resonators from Koenig of Paris; in light, a spectrometer with 12-inch divided circle, an ophthalmo-spectroscope from the Geneva Society, an optical bench, with accessories, from Duboscq, a Zeiss focometer, a Zeiss spectrometer, a Zeiss interferometer, and a polarimeter from Schmidt and Haensch; in electricity, galvanometers and resistance boxes, up to 250,000 units, from Edelman, Hartmann & Braun, Elliott Brothers, Nalder Brothers & Co., and Queen & Co., besides condensers, voltmeters, and ammeters; Lord Kelvin's graded galvanometers, a centi-ampere, a deci-ampere, and a deka-ampere balance made by White, of Glasgow; also thirteen Weston ammeters, voltmeters, and wall-meters for both alternating and direct currents. Among the standards are standard cells, a standard 100-ohm, a 10-ohm, and three 1-ohm coils, two standard condensers, and Ayrton and Perry's standard of self-induction, with a secohmmeter by Nalder Brothers.

The work in the laboratory is entirely quantitative in character, but provision has been made for illustrating the general principles of physics in the lecture courses.

CHEMICAL LABORATORIES.

The chemical laboratories provide for classes in general, analytical, organic, and physical chemistry, in pharmacy, in chemical technology, and in metallurgical assaying. They also provide for original research in the several branches of chemical science and for independent investigations in technology. In the course of the year, classes are formed in forty-six distinct courses of study. In the greater number of these courses the method of work combines training in laboratory operations with in-

struction by lectures and conference, these methods being united in one course.

The chemical building contains in all about 37,000 square feet of floor space. Besides the rooms for recitations, storage, administration, etc., the laboratories for students have an area of about 25,000 square feet.

The laboratory of general chemistry is separately organized. Courses in elementary inorganic chemistry, as well as in physical chemistry and the advanced branches of the science are offered; research work both in inorganic and in organic general chemistry is also arranged for a limited number of students. Modern apparatus is on hand for all the varieties of work that are liable to be undertaken, and a well-equipped balance room is provided.

The laboratories of analytical chemistry, organic chemistry, pharmacy, and chemical technology, are carried on together. There are separate work rooms for qualitative analysis, quantitative analysis, iron and steel analysis, electrolytic work, pharmaceutical preparations, organic preparations, organic analysis, physiological chemistry, and assaying of ores,—as well as rooms for the weighing-balances and instruments of precision, for gas analysis, and for optical work. The rooms recently fitted up for chemical technology in various industrial branches have nearly 3,000 square feet of floor space. There are eleven separate rooms for original research, two lecture rooms, and two recitation rooms. In the ventilation of the work rooms the supply of fresh air is enforced by driving fans, and the removal of foul air is effected by draught flues and by electric-motor fans, with which, also, working hoods are connected.

The chemical laboratories are open throughout the college year to all students of the University, and are regularly used by the several departments. They are also open to any person who wishes to pursue special studies therein, provided he complies with the conditions for admission to that department of the University to which the desired special studies properly belong.

Over three hundred students are engaged in these laboratories at the same time, each at a table provided for one worker. During the year, from 600 to 700 students complete from one to five courses of study each in the various branches of chemistry. The students engage in chemical work as it is needful for their different purposes,—the pursuit of science, or the preparation for teaching, for the several professions applying chemistry, and for the various chemical arts and industries.

The chemical library contains complete sets of all the most important chemical journals of present and former times, as well as the standard manuals, dictionaries, and encyclopedias. It provides well for research, for technology, and for all kinds of chemical work. A reading room, supplied with works of reference, is open in the chemical building.

GEOLOGICAL LABORATORY.

Opportunity for practical work in geology is provided in rooms set apart for this use in the museum building. The rooms are furnished with microscopes, photographic instruments, cutting and polishing lathes, and other apparatus for the preparation of specimens. Special encouragement and assistance are given to students wishing to carry on original investigations.

BOTANICAL LABORATORY.

In the botanical laboratory instruction is given in the practical study of the structure, development, and physiology of plants, and opportunity is offered for investigation in cellular biology, in embryology and development, in physiology, and in pathology.

Students in the more elementary courses have constant personal assistance and direction from the instructors; the advanced courses require more independent work. Every facility within the means at command will be provided for those capable of doing work in research.

The laboratory comprises four large rooms for general work, five smaller rooms for the work of instructors and investigators, a room for alcoholic material, a dark room, and store rooms. The section assigned to morphology and cytology is provided with microscopes (among them a Zeiss microscope with mechanical stage, apochromatic objectives, and compensation oculars), camera lucidas, and polarizing apparatus; Cambridge, Minot-Zimmermann, Jung, and freezing microtomes; sterilizers, means for embedding, stains and reagents, Wardian cases, and aquaria. The equipment for physiology, besides work rooms provided with chemicals and general apparatus, includes a dark room with constant temperature, incubators, sterilizers, horizontal microscope, balances, thermograph, barometer, auxanometers, klinostats, and centrifugals. The heavier apparatus is driven by water motors and an electric motor. There is a good working library in the laboratory, containing, besides many monographs, the leading French, German, and English periodicals.

ZOOLOGICAL LABORATORY.

The zoological laboratory comprises thirteen rooms in the second and third stories of the south wing of University Hall, with about 7,000 square feet of floor space, and it is lighted by forty-one windows. There is a large room for the elementary work of students, and a smaller room for more advanced work in vertebrate morphology. These two rooms accommodate about fifty students at one time. There is a room for the housing of small mammals, a room for the storage of alcoholic material, and a room in which a reference library is shelved. The professor in charge has a private room; and four small rooms, each accommodating

one or two persons, are used by the instructors and by students engaged in investigation. These rooms are provided with water and gas, and are fitted with tables especially designed for the work. A room for work in experimental zoology, a small lecture room, and a photographic room have been recently equipped. There are also rooms set apart in the museum building for the use of persons engaged in the study of museum material.

Suitable provision has been made for the study of animals inhabiting the neighboring waters. There are ten aquaria (the largest seven feet long), and there are arrangements for maintaining thirty small aquaria for the rearing of embryos and the study of isolated forms.

There is a good equipment of microscopes, including a Zeiss microscope with apochromatic lenses, of microtomes, of Zeiss's photographic apparatus, and of other accessories. For illustrative purposes, there is a collection of alcoholic specimens (many of them from the Naples Zoological Station), a set of Leuckart and Nitsche's wall charts and of Ziegler's wax models, and a small collection of Blaschka's glass models.

PHYSIOLOGICAL LABORATORY.

The physiological laboratory consists of four rooms:—one large room fitted for general laboratory and demonstration purposes, two smaller rooms for research, and a dark chamber. The rooms are amply supplied with water, electricity, and gas, and sufficient power for all purposes is furnished by two electric motors. The rooms are connected by wires and tubes for electrical and pneumatic transmission, so that in reaction and registration experiments the subject can be completely isolated from the noises incident to the operation of the recording instruments.

The equipment includes a complete set of apparatus for the work of elementary experimental classes, models of the brain and sense organs, a Hipp chronoscope, kymographs, a large pendulum to regulate the registration apparatus, and the minor accessories for reaction work. In addition there are many of the usual instruments for work in other lines. Such apparatus as is needed for advanced work or research will be procured as required. Every facility and encouragement is offered to students of sufficient preliminary training to undertake investigations on some special problem.

THE HOSPITALS.

There are two hospitals connected with the University, affording ample facilities for clinical instruction. One of the two is under the direction of the Faculty of the Department of Medicine and Surgery; the other is in charge of the Faculty of the Homœopathic Medical College. Further information in regard to the hospitals is given in connection with the descriptions of the medical departments.

AIDS TO MORAL AND RELIGIOUS CULTURE.

The churches of the city of Ann Arbor are cordially thrown open to the students, whose interests are largely consulted by the pastors in their pulpit instruction and in their plans of work. There are churches of the following communions in the city: Baptist, Congregationalist, the Disciples, German Lutheran, German Methodist, Methodist Episcopal, Presbyterian, Protestant Episcopal, Roman Catholic, and Unitarian.

The Students' Christian Association, which has a large membership, holds stated meetings for religious and for social improvement. Through the enterprising efforts of the Association and the benevolence of those interested in its aims, a spacious and beautiful building, called Newberry Hall, has been erected for its use opposite the University Campus.

Guilds, and other societies, consisting chiefly of students, have been organized in several of the churches both for religious and moral culture and for social entertainment. The Hobart Guild, connected with St. Andrew's Church (Protestant Episcopal), has a commodious building, called Harris Hall, planned and equipped for the objects of the Guild; and two of the several lectureships contemplated in its plans have been endowed,—the Baldwin Lectures for the Establishment and Defence of Christian Truth, and the Charlotte Wood Slocum Lectureship on Christian Evidences. The Tappan Presbyterian Association occupies the building known as McMillan Hall; it owns a theological library of several thousand volumes, and maintains annual courses of lectures upon church history and church work. The Methodist Episcopal church has organized the Wesleyan Guild, and has a permanent fund for the support of the Henry M. Loud Lectureship. Unity Club is a society formed by the Unitarian Church with similar purposes. The Foley Guild is an organization of Roman Catholic students under the patronage of the Rt. Reverend John S. Foley, bishop of the diocese. The society organized in connection with the Church of the Disciples is called the Inland League.

FACILITIES FOR PHYSICAL CULTURE.

Gymnasiums.—The University has two gymnasiums, one for men and one for women. The former is called the Waterman Gymnasium; the latter, the Barbour Gymnasium. In the conduct of the gymnasiums the aim is not so much the development of a few gymnastic experts as the provision of wholesome physical exercise for the many. The facilities of the buildings, including physical examinations and instruction, are free to all students, the only charge being a rental of \$2 a year for a locker. A physical examination and a stated amount of gymnasium

work in regular classes are required of students in the Department of Literature, Science, and the Arts and in the Department of Engineering during their first year of residence at the University. For other students gymnasium work, for the present, is voluntary.

The Waterman Gymnasium.—The Waterman Gymnasium was erected at a cost of about \$65,000. Of this sum \$20,000 was given by the late Joshua W. Waterman, of Detroit, in honor of whom the building is named, about \$26,000 was raised by private subscription, and \$6,000 was turned over by the trustees of a fund that had been accumulated through the effort of students. The main floor, which is a rectangle with truncated corners and dimensions of 150 by 90 feet, is well equipped with the various kinds of apparatus usually found in the best modern gymnasiums. Several smaller rooms are devoted to administration, fencing, boxing, and other special purposes, while the basement is given up to baths and lockers. The main hall is lighted in the day time by means of a large skylight 66 feet above the floor, and in the evening by electricity. A gallery makes room for an elliptical running-track 375 feet in length.

The Barbour Gymnasium.—In 1895 the sum of \$35,000 was contributed by a few friends of the University for the purpose of providing gymnasium facilities for the women students, with the understanding that a further sum of \$15,000 should be secured from other sources. The main gymnasium floor is nearly square, having dimensions of 90 by 88 feet, and a large part of the apparatus required for the first and the second year exercises has been put in. In addition to the gymnasium proper the building contains a commodious hall for lectures and meetings (called the Sarah Caswell Angell Hall), parlors for the accommodation of the women, and bathing facilities. The Women's Dean (who is also superintendent of the physical education of the women students) and Miss Alice G. Snyder, instructor in the gymnasium, have organized the work in accordance with the best known methods. Special care is taken to ascertain the exact physical condition of each student entering upon gymnasium work, defects of the body are discovered, and corrective work is prescribed for all who need it. Tennis, basket ball, and gymnastic games, as well as bicycling, form a part of the recreative work.

Regents' Field.—Regents' Field is a level tract of ten acres, owned by the University and situated a few minutes walk southward from the campus, which has been set apart and equipped especially for open-air sports. The campus itself provides room only for tennis-courts and for a small practice ground close by the gymnasium.

Supervision of Athletic Sports.—The general supervision of athletic sports is vested in a Board of Control, consisting of nine members, five of whom are chosen from the University Senate, and four chosen by the

Board of Directors of the Students' Athletic Association.* The Board thus constituted has charge of all matters involving the relation of athletic sports to the University; for example, the eligibility of players proposed for any University team, the arrangement of intercollegiate games, the granting of leaves of absence, and the investigation of charges of misconduct on the part of players. The policy of the Board is to foster the spirit of honor and gentlemanliness in athletics, to suppress evil tendencies, and to see that play shall not encroach too much upon the claims of work. For the furtherance of these ends certain specific rules and regulations have been adopted, a copy of which can be had on application to the Secretary of the University.

ORATORICAL ASSOCIATIONS.

In addition to the University instruction in elocution and oratory an active and earnest interest in public speaking is fostered and maintained through the agency of voluntary associations of students, and by working in connection with student organizations in other institutions.

NORTHERN ORATORICAL LEAGUE.

The Northern Oratorical League is composed of the oratorical associations of the University of Michigan, Northwestern University, the University of Wisconsin, Oberlin College, the State University of Iowa, the University of Chicago, and the University of Minnesota. Its purpose is to foster an interest in public speaking and to elevate the standard of oratory by holding annual contests. The contests are open only to undergraduates.

Peck Testimonial.—Through the generosity of Mr. Ferdinand W. Peck, of Chicago, the League receives an annual endowment of \$150, to be awarded to the honor contestants as follows: First Honor, \$100; Second Honor, \$50.

CENTRAL DEBATING LEAGUE.

The Central Debating League is composed of the debating associations of the University of Michigan, the University of Minnesota, Northwestern University, and the University of Chicago. Its purpose is to discuss in public leading questions of the day and in this way to develop ready and useful speakers.

The four universities are arranged in two groups for the semi-final

*The Board of Control for the year 1899-1900 consists of Professor PATTENGILL, *Chairman*, Professor LANE, Professor McMURRICH, Professor ROLFE, Assistant Professor DRAKE, Director CHARLES BAIRD, WILLIAM L. DAY, THOMAS R. WOODROW, and LEONARD D. VERDIER.

debates, which are held the second Friday in January. On the first Friday in April in each year the winners from the groups meet in a final debate in the city of Chicago.

Revell-Peck Testimonials.—Through the agency of Mr. Alexander H. Revell and other gentlemen of Chicago, the League is guaranteed an annual endowment of \$200, to be distributed as follows: \$150 to the side winning in the debate; \$50 to the losing side.

PENNSYLVANIA-MICHIGAN CONTESTS.

The second of the series of debates arranged between the University of Michigan and the University of Pennsylvania will be held in Philadelphia on the first Friday in March, 1900. The debates will probably be continued from year to year.

UNIVERSITY ORATORICAL ASSOCIATION.

The University Oratorical Association was organized by students of the Department of Literature, Science, and the Arts, and of the Department of Law, under the guidance of the Professor of Elocution and Oratory, to foster an interest in oratory and debate, and also to take part in the annual contests of the Northern Oratorical League and of the Central Debating League.

At the annual oratorical contest held the third Friday of March, the students who take first and second honors respectively are designated to represent the University as orator and alternate in the annual contest of the Northern Oratorical League, and are also awarded testimonials, as follows: First Honor, the Chicago Alumni Medal and \$75; Second Honor, \$50. In 1899 the first and second honors were awarded respectively to Martin Henry Carmody and Francis Dwight Eaman.

At the annual debating contest held the Friday before the Thanksgiving Recess, the students receiving the first, second, and third honors, respectively, are designated to represent the University in the annual contest of the Central Debating League. They are also awarded testimonials, as follows: First Honor, \$70; Second Honor, \$50; Third Honor, \$30. In 1898-99 the first, second, and third honors were awarded respectively to Charles Simons, George Kingsley, and Sigmond Sanger.

Chicago Alumni Medal and Testimonial.—The Chicago Alumni Association of the University of Michigan offers annually a bronze medal and a testimonial of seventy-five dollars for excellence in oratory. The medal, designed by Mr. Louis H. Sullivan, of Chicago, is given to the student who is awarded the first honor in the annual oratorical contest.

Ferry Testimonial.—Through the generosity of Mr. Dexter M. Ferry, of Detroit, a testimonial of \$150 has been provided for the debaters who

win places on the Pennsylvania-Michigan contest, to be distributed as follows: First Honor, \$70; Second Honor, \$50; Third Honor, \$30. In 1899 the testimonials were awarded respectively to LeRoy Allen Wilson, Martin Henry Carmody, and Francis Dwight Eaman.

OTHER UNIVERSITY ORGANIZATIONS.

Lecture Association.—The Students' Lecture Association provides each year, at a low price for admission, an attractive series of lectures and other entertainments.

Choral Union.—The Choral Union is an organization of students and others, for the study and practice of choral music under the direction of the Professor of Music in the University, and for the promotion of general musical culture. Under its auspices, and with the cooperation of the University Musical Society,* the following course of concerts is announced for the year 1899-1900:

- I. Symphony Concert: Pittsburg Orchestra.
- II. Organ Recital: Clarence Eddy.
- III. Choral Union Concert, with Chicago Symphony Orchestra.
- IV. Song Recital: Mme. Josephine Jacoby.
- V. "In a Persian Garden" and Selected Programme.
- VI, VII, VIII, IX, X. May Festival: a series of five concerts on three successive days in May.

The Columbian Exposition Organ, purchased for the University and now known as the Frieze Memorial Organ, in memory of the late Professor Henry Simmons Frieze, is used in this course of concerts.

Other Organizations.—Several organizations of University officers and students are maintained for the reading of papers and the holding of conferences on topics of interest that do not fall within the scope of ordinary class-room work; and some of them also aim to secure each year speakers of prominence to give public addresses on subjects germane to the purpose of the organization.

The students of the Department of Law arrange annually for a celebration of Washington's birthday. The address in 1899 was given by Honorable Charles Arnette Towne, of Duluth, Minn.

* The University Musical Society is a body corporate under the laws of the State of Michigan. It has no organic connection with the University, though its membership is restricted to past and present University officers and students. This Society has established the University School of Music in Ann Arbor, in which systematic instruction is given in vocal and instrumental music, such as the University cannot undertake to provide. A series of ten chamber concerts is included in its annual programme. Catalogues of the school can be had by applying to Professor A. A. Stanley.

RELATION OF STUDENTS TO THE CIVIL AUTHORITIES.

Students are temporary residents of the city, and, like all other residents, are amenable to the laws. If guilty of disorder or crime, they are liable to arrest, fine, and imprisonment. A rule of the University Senate provides that if a student is arrested, or is convicted by the civil authorities, he shall be cited to appear before the Faculty of the department in which he is matriculated, and shall be liable to suspension or expulsion.

FEES AND EXPENSES.

Matriculation Fee.—Every student before entering any department of the University is required to pay a matriculation fee. This fee, which, for a citizen of Michigan, is ten dollars, and for a person who comes from any other State or country, twenty-five dollars, is paid but once, and entitles the student to the privileges of permanent membership in the University.

Annual Fee.—In addition to the matriculation fee, every student has to pay an annual fee for incidental expenses. This fee is paid the first year of residence at the University, and every year of residence thereafter. Resident graduates are required to pay the same annual fee as undergraduates. The annual fees in the several departments of the University are as follows:

Department of Literature, Science, and the Arts: for Michigan students, thirty dollars; for all others, forty dollars.*

Department of Engineering: for Michigan students, thirty-five dollars; for all others, forty-five dollars.*

Department of Medicine and Surgery: for Michigan students, thirty-five dollars; for all others, forty-five dollars.†

Department of Law: for Michigan students, thirty-five dollars; for all others, forty-five dollars.

School of Pharmacy: for Michigan students, thirty-five dollars; for all others, forty-five dollars.

Homœopathic Medical College: for Michigan students, thirty-five dollars; for all others, forty-five dollars.

* An annual fee of ten dollars is required from all graduates who are granted the privilege of pursuing studies for an advanced degree *in absentia*.

† Graduate students who pursue special advanced laboratory courses in the Department of Medicine and Surgery, are required to pay, in addition to the ordinary laboratory expenses, a fee of ten dollars for each course taken.

College of Dental Surgery: for Michigan students, thirty-five dollars; for all others, forty-five dollars.*

The matriculation fee and the annual fee must be paid at the beginning of the college year. A by-law of the Board of Regents provides that no student or graduate shall be allowed to enjoy the privileges of the University until he has paid all fees that are due.

Fee for Special Entrance Examinations.—In the Department of Literature, Science, and the Arts, and in the Department of Engineering, an applicant for admission who desires to take the entrance examinations at a time not announced in the University Calendar is required to pay to the Treasurer a fee of five dollars before permission to take the examinations can be granted him.

Laboratory Expenses.—Students who pursue laboratory courses of study are required to pay for the materials and apparatus actually consumed by them. The deposits required in advance are different for the different courses, ranging from one to twenty dollars. The laboratory expenses of students will vary with their prudence and economy. Experience has shown that in the chemical laboratory the average expense for all courses is about one dollar and twenty cents a week.

Demonstration Courses.—A fee of ten dollars is charged for each of the demonstration courses given in the Department of Medicine and Surgery.

Gymnasium Expenses.—A charge of two dollars a year is made for the rental of a locker.

Diploma Fee.—The fee for the diploma given on graduation in ten dollars, and the by-laws of the Board of Regents prescribe that no person shall be recommended for a degree until he has paid all dues, including the fee for diploma.

Fees in Summer Schools.—The fees in the Summer Schools vary with the amount and character of the work taken. For further information, consult the chapters relating to these schools on subsequent pages.

Other Expenses.—Students obtain board and lodging in private families for from three to five dollars a week. Clubs are also formed in which the cost of board is from one dollar and a half to two dollars and a half a week. Room rent varies from seventy-five cents to two dollars a week for each student. The annual expenses of students, including clothing and incidentals, are, on the average, about three hundred and seventy dollars. The University does not undertake to furnish manual labor to students; yet a few find opportunities in the city for remunerative labor.

*A further charge of three dollars a year is made against each student in the College of Dental Surgery to cover the cost of certain special supplies provided by the University.

There are no dormitories and no commons connected with the University. Students on arriving in Ann Arbor can obtain information in regard to rooms and board by calling at the office of the Secretary of the University.

Department of Literature, Science, and the Arts.

THE Department of Literature, Science, and the Arts owes its name to a provision in the legislative act under which the University was organized in the year 1837. In this department the aim is to cover the broad field of general university study of the ancient and the modern languages and literatures, of history, philosophy, mathematics, science, and the liberal arts, as distinguished from the more special work of the professional schools in engineering, medicine, law, pharmacy, and dentistry. To this end it provides a large number of courses of instruction, from which the candidates for the several degrees offered may make selection. Provision is also made for students who wish to take special courses, or to pursue miscellaneous studies, without being candidates for a degree. The conditions on which such students are admitted are stated on page 52.

The Graduate School established in connection with this department is under the direction of an Administrative Council, appointed from the Faculty of the department.

A description of the Summer School connected with this Department is given in a subsequent chapter.

The academic year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901).

REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 51.]

[For admission of students not candidates for a degree, see page 52.]

[For admission of graduate students, see the chapter on the Graduate School, page 124.]

Applicants for admission as undergraduates who intend to become candidates for a degree, must be at least sixteen years of age, and must present satisfactory evidence of good moral character. They must bring credentials from their last instructor, or from the last institution with which they have been connected. These credentials must be presented to the Dean of the Department, at his office in University Hall, at the time application for admission is made.

Unless admitted on diploma (see page 54), any student who desires to become a candidate for a degree must pass examinations in the subjects named in *some one* of the four groups of requirements described in detail below. To meet the requirements in any one of the groups four years of preparatory study will ordinarily be necessary. Some of the requirements, as, for example, in *English, History, Mathematics, Physics, and Botany*, (described in detail on the following pages in sections 1 to 5 under Group I), are common to all the groups. Beyond these common requirements the groups differ from one another as follows:

In Group I the additional requirements comprise a preparation in the ancient languages covering four years of study of *Latin* and two years of *Greek*.

In Group II the additional requirements comprise four years of *Latin* together with two years of *French* or two years of *German*. The applicant has the privilege of choosing which of the two modern languages he will offer.

In Group III the amount of ancient or foreign language study is reduced to four years in all, but, as an offset to this reduction, two years of study in other subjects are required, namely, an additional year of *History* and a year of *Chemistry*.

In Group IV the amount of ancient or foreign language study is still further reduced to two years. To compensate for this reduction, the applicant must present the additional year of *History* and the year of *Chemistry*, as in Group III, and, furthermore, a second additional year of *History* and a year of *English Literature*.

Accredited graduates of the English course of a diploma school and such other persons as shall pass an examination in all the requirements of Group IV, with the exception of the requirement in an ancient or foreign language, may be admitted as special students with the right to make up the additional requirement and become candidates for a degree.

The courses of study offered in the University presuppose an adequate preparation on the part of the student, and it will, therefore, be necessary for a person who wishes to earn a particular degree to arrange his preparatory work with that end in view.* For example, a person who intends to enter at once on the course of study prescribed for the degree of Bachelor of Arts, must be prepared on the admission requirements of Group I. Those who intend to take the degree of Bachelor of Philosophy may present the subjects named in Group I, in Group II, or in Group III (provided four years of Latin are offered as the language requirement). Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science or of Bachelor of Letters.

The requirements of the several groups in detail are as follows:

GROUP I.

In Group I the subjects on which applicants for admission will be examined are as follows:

1. **English.**—*Grammar.*—Selections for analysis and parsing will be set, arranged to test the applicant's knowledge of the leading facts of English Grammar. To meet this requirement, a review of the subject should be had during the last year of the preparatory course.

Composition and Rhetoric.—The purpose of the examination in composition is to test the applicant's ability to write good English. To this end he will be asked to write two essays of not less than two hundred words each, one upon a subject drawn from the books mentioned below,

*The degree ultimately taken by the student will be determined by the particular set of requirements for graduation, described on pages 111 to 114 that he may complete.

and the other upon a subject drawn from his experience or observation. The language of these essays must be grammatical and clear. The spelling, punctuation, and capitalizing must be correct. The applicant must show ability to discriminate in the use of words and to construct well organized sentences and paragraphs. A topical outline should accompany each essay.

As preparation for this requirement, sustained and regular practice in writing is earnestly recommended. The student should prepare numerous written exercises throughout the four years of the high-school course, and a sufficient number of these exercises should be corrected by the teacher and revised by the student to secure the desired accuracy. The subjects upon which the student writes should not be drawn exclusively from literature; a considerable proportion of them should be taken from the student's every-day experience; and topics should be so distributed as to give proper training in the various types of discourse, namely, description, narrative, argument, and exposition. The student should be grounded in the essentials of rhetoric, but those principles should receive emphasis which are most likely to be of service to him in his practice in writing, such as the principles of sentential structure, paragraphing, and the outlining of the essay. The correction of stock specimens of bad English is not recommended, and will form no part of the entrance requirement.

It is further recommended that the reading of English classics and the memorizing of notable passages, both in prose and poetry, should form a regular exercise throughout the whole preparatory period. This is all-important for the development of a correct taste in language and literature.

The titles of the books, from which subjects for compositions will be chosen in the years named, are here given. The applicant should make himself familiar with the plot, incidents, and characters of each work. Equivalents will be accepted.

1900. Chaucer's *The Knight's Tale*, or Dryden's *Palamon and Arcite*; Milton's *Paradise Lost*, Books I and II; Pope's *Iliad*, Books I, VI, XXII and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Scott's *Ivanhoe*; De Quincey's *Revolt of the Tartars*; Cooper's, *The Last of the Mohicans*; Macaulay's *Essay on Milton*; Burke's *Conciliation with the Colonies*.

1901 and 1902. Shakespeare's *Merchant of Venice* and *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Conciliation with the Colonies*; Macaulay's *Essays on Milton and Addison*; Pope's *Iliad*, Books I, VI, XXII, and XXIV; The Sir Roger de Coverley Papers in *The Spectator*; Goldsmith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Cooper's *The Last of the Mohicans*; Tennyson's *The Princess*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

1903, 1904, and 1905. Shakespeare's *Merchant of Venice*, *Julius Caesar*, and *Macbeth*; Milton's *Lycidas*, *Comus*, *L'Allegro*, and *Il Penseroso*; Burke's *Conciliation with the Colonies*; Macaulay's *Essays on Milton and Addison*; The Sir Roger de Coverley Papers in *The Spectator*; Gold-

smith's *The Vicar of Wakefield*; Coleridge's *The Ancient Mariner*; Scott's *Ivanhoe*; Carlyle's *Essay on Burns*; Tennyson's *The Princess*; Lowell's *The Vision of Sir Launfal*; George Eliot's *Silas Marner*.

English Literary History.—In addition to the books just named, it is expected that several other English Classics will be read each year. These readings should be connected, in reasonable measure, with the lives and characters of the authors read and with the history of their times. A good knowledge of the chronological order and of the leading characteristics of the leading modern English writers should be aimed at. Care should be taken not to overload the text of these classics with a mass of irrelevant and petty learning. Many of the "school classics" now in use are over-edited.

2. History.—The requirement is intended to cover a year's work in one of the three following subjects:*

a. General History as presented in such a work as Myers's General History.

b. United States History. Johnston's History of the United States, or McLaughlin's History of the American Nation, may serve to indicate the kind and the amount of work necessary to meet this requirement.

c. English History. Coman and Kendall's History of England may serve to indicate the kind and the amount of work needed to meet this requirement.

3. Mathematics.—*Algebra.*—Fundamental rules, Fractions, Simple Equations, Involution and Evolution, the Calculus of Radicals, and Quadratic Equations, as given in Olney's Complete School Algebra, or an equivalent in other authors.

Geometry.—Plane, Solid, and Spherical Geometry as given in Beman and Smith's Plane and Solid Geometry, or an equivalent in other authors.

N. B.—It is very desirable that High Schools whose graduates are received on diploma arrange their courses so as to include a portion of both Algebra and Geometry in their last preparatory year. Students who do not come from diploma schools should take a similar review if they expect to succeed in the study of mathematics in the University.

4. Physics.—An amount represented by Carhart and Chute's Elements of Physics. Laboratory work in physics is earnestly advised, though not required; but students who have completed a course in laboratory practice may expect to derive advantage from it if they take work in the physical laboratory in the University (see page 87). It is expected that a full year will be given to preparation in physics.

*Any one of the blocks or periods of history recommended in the Report of the Committee of Seven to the American Historical Association (published under the title of *The Study of History in Schools*), even though not included in the list given, will be accepted as an equivalent for any one of the subjects named.

5. Botany.—Laboratory work for half a year with occasional recitations and review exercises. The method followed in Spalding's Introduction to Botany, or other modern text-book of similar plan and scope, may serve to indicate the kind of work required.

6. Latin.—*Grammar.*—A thorough preparation in the elements of Etymology, Syntax, and Prosody.

Prose Composition.—Applicants will be asked to translate into Latin a passage of connected English narrative, based upon some portion of the Caesar or Cicero read. As a text-book, Jones's, Collar's, or Daniell's is recommended.

Reading.—Four books of Caesar's Gallic War; six select orations of Cicero; and nine books of Virgil's *Æneid*. For books 7-9 of the *Æneid*, 1,500 lines of Ovid may be substituted. The books named may serve to indicate the amount and kind of text that may most profitably be made the basis of a thorough study in preparing for the work of the University. It should be remembered that the University desires *mastery of Latin*; the choice of selections studied is of secondary importance. Applicants for admission in Latin will be tested in the interpretation of passages of moderate difficulty outside the range of works commonly used in preparatory schools.

Four years of daily recitation should be given to the preparatory work in Latin. Special care should be taken with the training in Prose Composition. It is hoped that many schools will continue, as heretofore, to prepare students in the whole of the *Æneid*, or an equivalent. Students entering with this preparation will receive a certain amount of credit toward graduation.

The Roman method of pronouncing Latin is used at the University.

7. Greek.—*Grammar.*—Goodwin's or Hadley's. The inflections must be thoroughly mastered.

Prose Composition.—Jones's Exercises, with special reference to the writing of Greek with the accents, and to the general principles of syntax. Woodruff's Greek Prose Composition is taken as an equivalent.

Reading.—Three books of Xenophon's *Anabasis* and two books of Homer.

The so-called continental sound of the vowels and diphthongs, and pronunciation according to the written accents are preferred.

To meet the requirements in Greek, two years of daily recitation represent the minimum amount of time.

GROUP II.

In Group II the subjects on which applicants for admission will be examined, and the requirements in each subject, are all the same as in Group I (described above), with the exception that, in place of two

years of Greek, two years of French or two years of German is substituted. The requirement in each of these two languages is as follows:

French.—The whole subject of French Grammar. The applicant will be expected to read at sight easy French, and to translate correctly into French simple English sentences. The first year ought to be spent chiefly on the grammar and easy reading; and the second devoted to reading good modern French, accompanied by grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose; modern, rather than classic, dramas, should be read.

German.—(1) Ability to pronounce German correctly and to take part with reasonable correctness and facility in a simple conversation upon some topic drawn from the applicant's preparatory work. (2) Thorough familiarity with the everyday facts of the grammar, to be evinced by putting illustrative English phrases into German. (3) Ability to translate at sight a passage of fairly easy prose.

GROUP III.

In Group III the subjects of examination, and the requirements in each subject, are identical with those in Group II, except in the foreign language-requirement, and in the addition of a year of History and a year of Chemistry as a compensation for the reduction in the amount of language required.

The requirements in **English**, in **Mathematics**, in **Physics**, and in **Botany**, are the same as in Group I, described above (see pages 45-48).

In **History** the requirement includes any two of the three historical subjects named under Group I, each pursued for a year (see page 47 and foot-note).

In **Chemistry** the requirement is intended to cover one year's work. As a text-book, Freer's *Elementary Chemistry*, or an equivalent amount of work in Remsen's *Introduction to the Study of Chemistry*, is recommended. In either case the text should be accompanied by laboratory work.

The requirement in **foreign language** may be satisfied by (1) four years of Latin; (2) four years of French; (3) four years of German; (4) two years of Latin with two years of French; (5) two years of Latin with two years of German; or (6) two years of French with two years of German. The requirements in the several cases are as follows:

Latin.—The *four-year requirement* is the same as the requirement in Latin in Group I (see page 48).

The *two-year requirement* comprises Jones's *First Latin Book* or an equivalent amount in some other introductory text-book; four books of Caesar's *Gallie War*; and one of the orations of Cicero.

French.—The *two-year requirement* is the same as the requirement in French in Group II, above (see page 49).

The *four-year requirement* comprises the *two-year requirement*, together with additional matter as follows: The third and fourth years should be spent in acquiring as great a familiarity as possible with the literature, in further practice in composition, and, where practicable, in practice in conversation. Some of the plays of Corneille, Racine, and Molière, should be read; some of the more modern plays of Hugo, Musset, and Dumas; some specimens of the best prose in history, memoirs, and essay; and some of the lyric poetry of this century. It is advised that the literature as a whole be studied in Saintsbury's or in Warren's Primer. The student ought also to be able to express himself in French grammatically and with ease on ordinary topics.

German.—The *two-year requirement* is the same as the requirement in German in Group II, above (see page 49).

The *four-year requirement* comprises the *two-year requirement*, together with additional matter as follows: Five classical dramas to be selected from the works of Goethe, Schiller, and Lessing; Schiller's History of the Thirty Years' War, or an equivalent amount of other historical reading or of good modern fiction. The applicant will be required to write a short essay in German upon some subject taken from the works which he presents. He ought also to be able to express himself in German grammatically and with ease on ordinary topics.

GROUP IV.

In Group IV the subjects of examination, and the requirements in each subject are similar to those in Group III, except that a year of History and a year of English Literature are added as a compensation for the reduction in the amount of language required.

The requirements in **English**, in **Mathematics**, in **Physics**, and in **Botany**, are the same as in Group I, described above (see pages 45-48).

In **Chemistry** the requirement is the same as in Group III, above.

In **History** the requirement includes the three historical subjects named under Group I, each pursued for a year (see page 47 and footnote).

In **English Literature** the requirement is intended to cover one year's work. Stopford A. Brooke's English Literature (edition of 1896), or any other manual, may be used for an outline of the subject. As much time as practicable should be given to the careful reading of representative authors in each period.

The requirements in **foreign languages** may be satisfied by (1) two years of Latin; (2) two years of French; or (3) two years of German. A single year in each of two languages will not be accepted as an equiv-

alent for two years in one language. The requirements in the several cases are as follows:

Latin.—The same as the *two-year requirement* in Latin in Group III, above.

French.—The same as the requirement in French in Group II, above.

German.—The same as the requirement in German in Group II, above.

ADMISSION TO ADVANCED STANDING.

1. A student who brings a certificate of standing from an approved college or university, showing that he has satisfactorily completed at least two years of the curriculum of the institution from which he comes, may be admitted without examination to equal standing in this department of the University.

2. A student who has completed at least one year's college work in an approved college, or is a graduate of an approved normal school, and who brings an explicit official certificate describing his course of study and scholarship, and testifying to his good character, may be admitted to advanced standing without examination, except such as may be necessary to determine what credit he is to receive for work done in the institution from which he comes. Students coming from colleges where requirements for admission are substantially equivalent to those of this department of the University may expect to be able to go on with their work without loss of standing.

3. A student who has not completed a year's college work in an approved college, but, previous to applying for admission to this department, has pursued studies beyond those required for admission, may be admitted to advanced standing on passing examinations in the subjects named in some one of the four groups of requirements for admission, and also in such undergraduate studies as he may ask to be credited with in advance. The examination for advanced standing however, may be waived in the case of studies pursued in a graduate course by graduates of a diploma

school, provided the work of such graduate course has been inspected and approved by the Faculty.

4. Rules relating to admission to advanced standing:

a. Any student who applies for advanced standing on the conditions stated in paragraphs (1) and (2), above, must present his credentials and certificates to the Dean of the Department *within four weeks after matriculation.*

b. Any student, whether he intends to become a candidate for a degree or to pursue select studies, who applies for advanced standing on the conditions stated in paragraph (3) above, must present to the Registrar, before the fifteenth of October (or, if he be matriculated at the beginning of the second semester, before the first of March), a statement showing the amount of work done in the subjects in which credit is asked. The Registrar will then furnish him a blank form for presentation to the professors in charge of the several subjects named in the blank.

c. Credits must be secured, and the blanks must be returned to the Registrar, before the first of November (or, if the student be matriculated at the beginning of the second semester, before the fifteenth of March).

d. No credit will be given for advanced standing after the dates named in (c).

e. No credit will be given for high school work in any subject unless the subject has been pursued in the school for at least one year.

f. An account once closed cannot be reopened without special permission of the Faculty.

ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.

Persons who desire to pursue studies in this department, and do not desire to become candidates for a degree, are admitted on the following conditions:

1. All persons under twenty-one years of age must pass the entrance examinations in some one of the four groups described on pages 45 to 51.

2. Persons over twenty-one years of age must show that they have a good knowledge of English and are otherwise prepared to pursue profitably the studies they may desire to take up.

3. Should a student who enters under the preceding provision (2) subsequently become a candidate for graduation, he must pass all the examinations for admission required of such a candidate, at least one year previous to the time when he proposes to graduate.

4. Students not candidates for a degree who wish credit for studies pursued before admission are referred to the rules relating to advanced standing given above.

TIME OF EXAMINATION.

The examination for admission to the Department of Literature, Science, and the Arts, will be held on Thursday, Friday, and Saturday, September 20, 21, and 22, 1900. Applicants will not be examined at any other time except on payment of a special fee of *five dollars*.

As the examination begins at 8 A. M. on Thursday, it will be necessary for all applicants for admission on examination to present their credentials to the Dean of the Department, at his office, on Wednesday, September 19, between the hours of 9 and 5, and receive from him papers admitting to the examination.

The examinations in the several subjects will be in writing, and will be held in Tappan Hall in accordance with the schedule given below.

SCHEDULE OF EXAMINATIONS FOR ADMISSION IN 1900.

THURSDAY. FRIDAY. SATURDAY.

	Sept. 20.	Sept. 21.	Sept. 22.	TAPPAN HALL.
Physics.....	8 A. M.	.....	.....	Lecture Room
Geometry.....	.....	8 A. M.	.....	Lecture Room
Algebra.....	.....	.....	8 A. M.	Lecture Room
History.....	10 A. M.	.....	.....	Lecture Room
Botany.....	.....	10 A. M.	.....	Lecture Room

English Literature..	10 A. M.	.....	10 A. M.	Room 10
Latin	2 P. M.	{ 2 P. M. 4 P. M.	.....	Lecture Room
German	2 P. M.	2 P. M.	.....	Room 10
French .....	.....	2 P. M.	.....	Room 12
Greek .....	.....	2 P. M.	.....	Room 11
English .....	.....	.....	2 P. M.	Lecture Room
Chemistry.....	4 P. M.	.....	4 P. M.	Lecture Room

ADMISSION ON DIPLOMA.

The privilege of sending pupils for admission on diploma is limited to schools that have been approved by the Faculty.

On request of the proper authorities the Faculty designates a committee to visit a school and report upon its condition. If satisfied from the report of the committee that the school is taught by competent instructors, and is furnishing a good preparation to meet the requirements for admission included in any one or more of the four groups described on pages 45 to 51, then the Faculty places the school on the approved list and receive its graduates, on the conditions named below, for a period not exceeding three years (inclusive of the year of visitation); reserving, however, the right to require another inspection, if, within the period specified in each case, important changes affecting the course of study in the school, or the efficiency of the instruction, seem to make an examination necessary.

The superintendent of each approved school is expected to send to the President of the University, annually, at a date not later in the year than March first, a catalogue of the school; or, if no catalogue is published, he is expected to send a statement giving the names of the teachers, the number of pupils, and a description of the courses of study.

The conditions on which a graduate of an approved school is admitted without examination are as follows:—He must present to the Dean of the Department a certificate signed by the superintendent or the principal of the school from

which he comes, testifying that he has successfully completed an approved preparatory course of study, and has sustained satisfactory examinations in *all* the studies prescribed in some *one* of the four groups of requirements for admission,* and, furthermore, is recommended by the school authorities for admission to the University. This certificate will be valid for a period of fifteen months after the graduation of the student from the school.

Blank forms for the certificate named above can be obtained on application to the Dean of the Department. All graduates of approved schools who intend to enter the University in September of any year are urged to procure their certificates and send them to the Dean at as early a date as possible after graduation. If, on examination, the certificates are found satisfactory the applicant will receive from the Dean a statement entitling him to admission to the University without examination.

COURSES OF INSTRUCTION.

[For courses in the Department of Medicine and Surgery and in the Department of Law which are open to students in the Department of Literature, Science, and the Arts, see pages 107 to 111.]

The Courses of Instruction are subject to change from time to time. At the opening of each academic year, a special Announcement is issued, giving full information concerning the courses offered for the year, and the days, hours, and places of lecture, recitation, and laboratory work. From the courses offered in the various branches of learning, the student is allowed to make his choice, under regulations prescribed by the Faculty (see page 119).

The courses announced for the year 1899-1900 are described below. The amount of credit toward graduation assigned to each course is indicated by the expressions *one*

*See paragraph on page 45 concerning the admission of graduates of an English course.

hour, two hours, etc., an hour of credit being given for the satisfactory completion of work equivalent to one exercise a week during one semester. Lectures and recitations are usually one hour in length, but in laboratory work, drawing, and other practical exercises, a longer attendance is required in order to secure an hour of credit.

For convenience of reference a few courses are included that are not ordinarily open to undergraduates, and for some of these no hours of credit are given.

GREEK.*

All students of Greek, except those who are admitted to advanced standing, are required to pursue Courses 1 and 2 before passing on to the other courses. The Teacher's Courses are open only to those who have completed Courses 1, 2, 3, 4, and either 5*a* or 5*b*, and at least five hours additional of elective work; they are a prerequisite for the teacher's diploma and for a recommendation to teach Greek. Courses 7*a*, 14, 18, 19, 21, 22, 23, are primarily for graduate students, but are open also to undergraduates of exceptional proficiency.

FIRST SEMESTER.

1. Selected Orations of Lysias. Xenophon's Symposium. Three sections. *Four hours.* Professor PATTENGILL and Dr. WAIT.
 4. Demosthenes. Studies in the Attic Orators. Two sections. *Four hours.* Professor PATTENGILL and Dr. WAIT.
 - 6*a*. Teacher's Course. Lectures on Greek Grammar. *Two hours.* Mr. DE COU.
 - 7*a*. Seminary in Tragedy. Interpretation of the Electra, the Philoctetes, and the Oedipus at Colonus of Sophocles, with special reference to the principles of Greek Dramatic Art and the chief problems of textual criticism. *Three hours.* Mr. DE COU.
 - [7*b*. Seminary in Tragedy. Several of the representative plays of Euripides will be read with special reference to the Dramatic Art of the poet, his relation to his own times, his metres, and dramatic innovations. *Three hours.* Professor D'OOGHE.
- Course 7*b* is omitted in 1899-1900, but may be expected in 1900-01.]

* **School of Classical Studies at Athens.**—This University, through the generosity of some of its friends, is a contributor to the support of the American School of Classical Studies at Athens. The School affords facilities for archaeological and classical investigation and study in Greece, and graduates of the Department of Literature, Science, and the Arts of this University are entitled to all its advantages without expense for tuition. Professor M. L. D'Ooge was director of the school in 1886-87.

8. History of Greek Art from the Beginning to the Roman Period. Gardner's Handbook of Greek Sculpture and Tarbell's History of Greek Art are made the basis of a more general study. *Three hours.* Mr. DE COU.
- [10. Introductory Course in Plato; the Apology, the Crito, and the Gorgias. *Three hours.* Professor D'OUGE.
Course 10 is omitted in 1899-1900, but may be expected in 1900-01.]
11. Studies in Plato. The Symposium and other dialogues. *Three hours.* Professor PATTENGILL.
- [14. The Legal Orations of Isaeus and Demosthenes, with special reference to Attic Law and Judicial Procedure. *Three hours.* Professor PATTENGILL.
Course 14 is omitted in 1899-1900, but may be expected in 1900-01.]
16. Modern Greek. *Two hours.* Mr. DE COU.
18. Introduction to Greek Epigraphy and Reading of Inscriptions. *Two hours.* Dr. WAIT.
- [22. The Nicomachean Ethics of Aristotle. Books I-IV and X. *Two hours.* Professor D'OUGE.
Course 22 is omitted in 1899-1900, but may be expected in 1900-01.]
24. Reports on Classical Philology; analyses and reviews in the domain of the Greek and Latin languages and literatures, and accounts of recent researches and explorations in Greek and Roman archæology, history, and antiquities, by members of the classical faculty and graduate students.

SECOND SEMESTER.

2. Homer, Odyssey. Secs. I and II, Books I-XII. Sec. III, Books XIII-XXIV. *Three hours.* Secs. I and II, Dr. WAIT. Sec. III, Professor PATTENGILL.
3. History of Greek Literature. Two sections. *One hour.* Dr. WAIT.
5. Dramatic Poetry. This course may be elected as 5a or 5b.
 - 5a. Sophocles, Antigone; Aristophanes, The Clouds. *Four hours.* Mr. DE COU.
 - 5b. Euripides, Iphigenia in Tauris; Aristophanes, The Clouds. *Four hours.* Professor PATTENGILL.
- 6b. Teacher's Course. Greek Writing. *Two hours.* Dr. WAIT.
- [9. Theocritus, Bion, and Moschus. *Three hours.* Professor PATTENGILL.
Course 9 is omitted in 1899-1900, but may be expected in 1900-01.]

- [13. Pindar, the Olympian and Pythian Odes. Bacchylides. *Three hours.* Professor D'OUGE.
Course 13 is omitted in 1899-1900, but may be expected in 1900-01.]
- [15. Greek Antiquities. Lectures on the Monuments and the Private Life of the Ancient Athenians. Illustrated by stereopticon views. *One hour.* Professor D'OUGE.
Course 15 is omitted in 1899-1900, but may be expected in 1900-01.]
17. The Greek Minor Poets. *Three hours.* Professor PATTENGILL.
19. Introduction to Homer. A study of the peculiarities of the Epic Dialect and the Homeric Verse. *Three hours.* Mr. DE COU.
20. Lucian. A course in rapid reading. *Two hours.* Mr. DE COU.
21. The Greek Dialects and Elements of Epigraphy. Reading of Cauer's *Delectus Inscriptionum Graecarum* and Roberts's Introduction to Greek Epigraphy. *Three hours.* Mr. DE COU.
23. The Athenian Constitution of Aristotle, with special reference to the judicial and political antiquities of Athens. *Two hours.* Mr. DE COU.
25. Reports on Classical Philology. Continuation of Course 24.

LATIN.

Courses 1 (or 1a and 1b) and 2 must precede all the rest.

In order to increase the range of work offered to advanced students, several of the courses in Latin are given in alternate years, new courses being introduced as opportunity is thus afforded.

Students who wish a recommendation to teach Latin must satisfactorily complete Courses 10, 11, 12, 19, 21, 22.

Courses 1, 2, 3, 4, 5, 6 are intended primarily for undergraduates; Courses 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, are for graduates and undergraduates; Courses 23, 24, 25, 26, 27, 28, are exclusively for graduates.

FIRST SEMESTER.

1. Cicero, De Senectute and De Amicitia. Five sections. *Three hours.* Mr. MEADER, Dr. SANDERS, Mr. ALLEN, and Mr. HADZSITS.
- 1a. Cicero, De Senectute and De Amicitia. Three sections. *Two hours.* Dr. SANDERS.
- 1b. Latin Writing. Three sections. *One hour.* Dr. SANDERS.
3. Roman Literature. Selections from representative authors. Four sections. *Four hours.* Professor ROLFE, Assistant Professor DRAKE, and Mr. MEADER.

- [5. The Letters of Pliny. Interpretation of Selected Letters, with a study of Roman life and society at the end of the first century, A. D. *Three hours.* Professor ROLFE.
Course 5 is omitted in 1899-1900, but may be expected in 1900-01.]
7. The Germania and Agricola of Tacitus. *Two hours.* Assistant Professor DRAKE.
- [9. Suetonius and Velleius Paterculus. Lectures and interpretations. *Three hours.*
Course 9 is omitted in 1899-1900, but may be expected in 1900-01.]
11. Latin Writing. Two sections. *Two hours.* Professor ROLFE and Dr. SANDERS.
Course 11 is introductory to Course 12. The principal aim is to secure correctness of expression and a feeling for idiom. The course may profitably be taken by students whose work in the Latin writing of Course 16 has been of high grade.
13. Lucretius. Interpretations and lectures. *Two hours.* Professor KELSEY.
- [15. Introduction to Latin Palæography. Lectures on the various styles of writing found in Latin manuscripts, with exercises in reading from fac-similes. *Two hours.* Dr. SANDERS.
Course 15 is omitted in 1899-1900.]
17. Latin Grammar. Lectures on the phonology and morphology of the language, with an outline of the syntax scientifically considered. *Three hours.* Professor ROLFE.
19. Roman Political Antiquities. Lectures. This course deals with the development of the Roman constitution to the death of Augustus. Special attention is given to the problems that arose in the transition from the Republic to the Empire. *Two hours.* Assistant Professor DRAKE.
21. Teacher's Course. Interpretation of Caesar's Gallic War, with studies in the syntax and military antiquities. *Three hours.* Professor KELSEY.
Course 21 is open only to those who receive special permission.
- 21a. Studies in Caesar. *Two hours.* Professor KELSEY.
Course 21a is open only to those who receive special permission.
23. Report on the Progress of Research. Analysis and criticism of important articles in the domain of the Latin and Greek languages and literatures, Latin and Greek grammar and lexicography, Greek and Roman history, archæology, and antiquities, by members of the classical faculty and members of the Latin and Greek seminaries.

25. Seminary. Roman Satire. Professors KELSEY and ROLFE.
27. Study of Roman Coins. Professor KELSEY.

SECOND SEMESTER.

3. Selections from Catullus. Livy, Books I, XXI, and XXII. Seven sections. *Four hours.* Mr. MEADER, Dr. SANDERS, Mr. ALLEN, and Mr. HADZSITS.
4. Horace. Selections from the Odes, Satires, and Epistles. Studies in Roman Antiquities. Four sections. *Four hours.* Professor ROLFE, Assistant Professor DRAKE, and Dr. SANDERS.
6. Christian Latin. Interpretation of Selections from the early Latin writers of the Christian church, with illustrative lectures upon Christian archæology and antiquities. *Three hours.* Mr. MEADER.
8. Roman Law. History of legislation to the time of Justinian. The Institutes of Justinian. *Three hours.* Assistant Professor DRAKE.
10. Introduction to Roman Archæology. Elements of Roman Archæology; architectural history of Rome; sculpture and painting in the Roman period. Lectures. *Three hours.* Professor KELSEY.
12. Latin Writing. Advanced course, with collateral reading and lectures on Latin style. *Three hours.* Professor ROLFE.
In Course 12, attention is given not only to correctness of expression, but also to matters of style and the finer distinctions of the language. It is limited to those whose work in Course 11 has been of a high grade.
- [14. The Italic Dialects. *Two hours.* Professor ROLFE.
Course 14 is omitted in 1899-1900, but may be expected in 1900-01.]
- [16. Latin Inscriptions. Reading of inscriptions of different periods from squeezes and fac-similes. Interpretations of inscriptions with special reference to the study of Roman life and society. *Three hours.* Professor KELSEY.
Course 16 is omitted in 1899-1900, but may be expected in 1900-01.]
18. Historical Proseminary. Study of historical subjects from the sources. The Roman Campaign in Germany, in 213 A. D. *Two hours.* Assistant Professor DRAKE.
20. Proseminary in Latin Grammar. Studies in Syntax. *Two hours.* Professor ROLFE.
22. Teacher's Course. Study of Virgil. *Three hours.* Professor KELSEY.
24. Reports on the Progress of Research. Continuation of Course 23.

26. Seminary. Roman Satire. Continuation of Course 25. Professors KELSEY and ROLFE.
28. Study of Roman Coins. Professor KELSEY.

SANSKRIT.

Before beginning the study of Sanskrit, the student should have pursued courses in Greek and Latin for at least four semesters or, instead of either Greek or Latin, Germanics of the early period.

FIRST SEMESTER.

1. Beginners' Course. Grammar, and exercises in translation and composition. Text books: Perry's Sanskrit Primer and Whitney's Grammar. *Three hours.* Dr. WAIT.

SECOND SEMESTER.

2. Interpretation of the prose selections contained in Lanman's Sanskrit Reader, with elementary studies in the comparative morphology of the more important cognate languages. *Three hours.* Dr. WAIT.

HELLENISTIC GREEK.

FIRST SEMESTER.

1. New Testament. Gospel of John, including grammatical study of the peculiarities of Hellenistic Greek and historical introduction to the book and the Apostolic period. Text-books: Westcott and Hort's Greek New Testament, revised edition with introduction by Ph. Schaff; Thayer's Winer's New Testament Grammar; Thayer's Greek-English Lexicon. *Two hours.* Professor CRAIG.

SECOND SEMESTER.

2. Septuagint. Introductory Lectures with selected readings from the historical and prophetic books. Apocrypha—Maccabees, Books I and II. Text-books: Vetus Testamentum Graece by L. Van Ess, or the Old Testament in Greek by H. B. Swete, Vols. I-III. Grammar and Lexicon as in Course I, and Liddell and Scott's Lexicon. *Two hours.* Professor CRAIG.

HEBREW

Graduate students who wish to elect a Semitic language as one of the subjects leading to a higher degree, are required to complete Courses 1 and 2 in Hebrew, or an equivalent thereto in some branch of Semitics, before entering on the advanced work.

FIRST SEMESTER.

1. Genesis. Baer and Delitzsch's Text. Harper's Elements of Grammar; Craig's Hebrew Word Manual. *Three hours.* Professor CRAIG.
3. Prophetic Literature: Amos and Hosea. Study of the nature and content of prophecy in its literary, historical, and ethical aspects. Text-books: Hebrew Bible, Driver's Hebrew Moods and Tenses. *Two hours.* Professor CRAIG.

SECOND SEMESTER.

2. Deuteronomy, Joshua, I Samuel, Ruth, Jonah. Theile's Biblia Hebraica. Davies's Lexicon. Müller, Outlines of Hebrew Syntax. *Three hours.* Professor CRAIG.
4. The Book of Job, including study of the literary structure and critique of the dominant ideas. Text-books: Baer and Delitzsch's Text and Haupt's Polychrome Edition (text by Siegfried). *Two hours.* Professor CRAIG.

HEBREW LITERATURE.

FIRST SEMESTER.

1. Lectures. Introduction to the study of the historical and prophetic books of the Old Testament, with special reference to the last results of Assyrian and Babylonian research. The lectures are largely historical and treat also of the origin and character of Hebrew institutions. *Two hours.* Professor CRAIG.
- Course I is open to all students. A knowledge of Semitic languages is not required.

ASSYRIAN.

FIRST SEMESTER.

1. Introduction to Easy Historical Inscriptions from the Ninth Century, B.C., with study of the Grammar. Text-book: Delitzsch's Assyrische Lesestücke, dritte Auflage; Meissner, Chrestomathie. *Three hours.* Professor CRAIG.
3. The Babylonian Stories of Creation; the Deluge and the War of Marduk against Tiamat; lectures on the Cosmology of the Babylonians; Inscription of Tiglathpileser I, cir. 1120 B.C. *Two hours.* Professor CRAIG.
5. Seminar in Sumerian. *Two hours.* Professor CRAIG.

SECOND SEMESTER.

2. Historical Inscriptions. Selections from the Cuneiform Inscriptions of Western Asia (R. I—V). Professor CRAIG.

4. Religious Literature. Texts: King's "The Prayers of the Lifting up of the Hand" and Craig's "Religious Texts." Professor CRAIG.

ARABIC.

FIRST SEMESTER.

1. Introductory Course. Grammar and reading. Text-books: Socin's Arabic Grammar (English ed.) and Brünnow's Chrestomathy. *Two hours.* Professor CRAIG.
2. Selected Suras from the Quran with introductory lectures on the life of Muhammed and Muhammedanism. *Two hours.* Professor CRAIG.

SEMITIC HISTORY.

SECOND SEMESTER.

1. General Lecture Course. The beginnings of history and civilization: the Babylonians, Assyrians, Hebrews, Phoenicians, Arabians, Egyptians. *Two hours.* Professor CRAIG.
- Course 1 is open to all students of the University. It is based upon the monuments and offers in outline a history of these ancient peoples, sketching their early organization, forms of government, social and religious life, art, science, and literature, showing the conspicuous part they have performed in the history of the world, and the dominance of their influence in our own era. The lectures are illustrated by 200 lantern views, 200 stereopticon views, numerous photographs, photolithographs, and original tablets and casts.

FRENCH.

Courses 1, 2, 3, 4 must precede all others. Courses 1, 2, 3, 4, 5, 6, 15, 16, 19, 20 are prescribed for candidates for the Teacher's Diploma.

FIRST SEMESTER.

1. Elementary Course. Grammar and easy reading, with practice in speaking. Nine sections. *Four hours.* Assistant Professors DE PONT, LEVI, and BOURLAND, Dr. EFFINGER, Dr. THIEME, Dr. OLIVER, and Mr. GAUSS.
3. Modern Prose and Plays, with practice in speaking and writing French. Continuation of Course 2. Seven sections. *Four hours.* Assistant Professors DE PONT and BOURLAND, Dr. EFFINGER, Dr. THIEME, Dr. OLIVER, and Mr. GAUSS.
5. Advanced Prose Composition. *Three hours.* Assistant Professor DE PONT.

7. The Classic Drama: Corneille, Racine, Molière. Recitations, reports, lectures. Two sections. *Two hours.* Assistant Professor LEVI and Dr. OLIVER.
9. Prose Writers of the Classical Period: Pascal, Bossuet, Sévigné, LaBruyère, Saint-Simon. *Two hours.* Dr. OLIVER.
11. The Dramatic Literature of the Nineteenth Century (I). The Drama of the Revolution; the Melodramatic Period; the Romantic Movement. *Three hours.* Dr. EFFINGER.
13. Poetry of the Nineteenth Century. Lamartine, Musset, Vigny, Hugo. *Two hours.* Assistant Professor LEVI.
15. History of French Literature in the Seventeenth, Eighteenth and Nineteenth Centuries. A general survey. Lectures, reading, reports. *Two hours.* Assistant Professor LEVI.
17. French Literature of the Sixteenth Century. Lectures, reading, reports. *Three hours.* Dr. THIEME.
19. Historical French Grammar (I). Phonology. Lectures, with illustrative Old-French Readings. *Two hours.* Assistant Professor BOURLAND.

SECOND SEMESTER.

2. Elementary Course Continued. Reading of modern French prose and plays, with practice in speaking and composition. Nine sections. *Four hours.* Assistant Professors DE PONT, LEVI, and BOURLAND, Dr. EFFINGER, Dr. THIEME, Dr. OLIVER, and Mr. GAUSS.
4. Reading of Modern French Texts, with practice in speaking and writing French. Continuation of Course 3. Seven sections. *Four hours.* Assistant Professors DE PONT and BOURLAND, Dr. EFFINGER, Dr. THIEME, Dr. OLIVER, and Mr. GAUSS.
6. Advanced Composition, with practical exercises for teachers. *Two hours.* Assistant Professor LEVI.
8. Dramatists of the Eighteenth Century. Regnard, Marivaux, Destouches, Piron. Lectures, reading, reports. *Two hours.* Assistant Professor DE PONT.
10. Prose Writers of the Eighteenth Century. Montesquieu, Voltaire, Diderot, Rousseau. Two sections. *Two hours.* Assistant Professor DE PONT and Dr. OLIVER.
12. The Dramatic Literature of the Nineteenth Century (II). Continuation of Course 11. *Three hours.* Dr. EFFINGER.
14. Literary Criticism in the Nineteenth Century. Lectures, reading, reports. *Three hours.* Dr. THIEME.
16. History of French Literature in the Seventeenth, Eighteenth, and Nineteenth Centuries. Continuation of Course 15. *Two hours.* Assistant Professor LEVI.

20. Historical French Grammar (II). Morphology. Lectures. *Two hours.* Assistant Professor BOURLAND.

ITALIAN.

FIRST SEMESTER.

2. Continuation of Course 1. Tasso. *Three hours.* Assistant Professor LEVI.
4. Dante, *La Vita Nuova.* *One hour.* Assistant Professor LEVI.

SECOND SEMESTER.

1. Italian Grammar. Easy Prose. *Three hours.* Assistant Professor LEVI.
Course 1 is open only to those who have completed Courses 1 and 2 in French.
3. Dante, *Divina Commedia.* Lectures and recitations. *Three hours.* Assistant Professor LEVI.

SPANISH.

FIRST SEMESTER.

1. Elementary Course. Grammar and easy reading. *Three hours.* Assistant Professor BOURLAND.
Course 1 must be preceded by Courses 1 and 2 in French.
3. Calderon, *La Vida es Sueño.* Cervantes, *La Jitanilla.* *Two hours.* Assistant Professor BOURLAND.

SECOND SEMESTER.

2. Continuation of Course 1. Reading of modern prose, with practice in speaking. *Three hours.* Assistant Professor BOURLAND.
4. Cervantes, *Don Quijote.* *Two hours.* Assistant Professor BOURLAND.

GERMAN.

Courses 1 and 2 meet the elementary degree requirement of eight hours, Courses 3 and 4 the advanced requirement of eight hours, and Courses 1 to 4 the maximum requirement of sixteen hours. Courses 7 to 24 are advanced undergraduate and graduate courses and should be elected only after consultation with the instructors. Students preparing to teach German are strongly recommended to take Courses 5₁, 6₁, (or 5₂, 6₂), 9, 10, 11, 12, 13, 14.

FIRST SEMESTER.

1. Elementary Course. Pronunciation, grammar, and easy reading, with practice in speaking and writing German. Thomas's German Grammar. Six sections. *Four hours.* Dr. DIEKHOFF. Dr. FLORER, Dr. ROEDDER, Dr. BOUCKE, and Dr. HILDNER.

3. Modern Prose, narrative and dramatic, with practice in speaking and writing German. This course is given in two divisions: 3a, intended for students who have passed the elementary requirement in German for admission, and 3b, open to students who have taken Courses 1 and 2 in the University, and to others by special permission.
 - 3a. Seven sections. *Four hours.* Assistant Professors WINKLER and MENSEL, Dr. DIEKHOFF, Dr. FLORER, Dr. ROEDDER, and Dr. BOUCKE.
 - 3b. Three sections. *Four hours.* Dr. DIEKHOFF, Dr. FLORER, and Dr. BOUCKE.
5. Third-Year Electives. This course may be elected as 5a, 5b, etc.
 - 5a. Goethe's *Götz von Berlichingen*, and *Leiden des jungen Werthers*; Schiller's *Räuber*. *Three hours.* Dr. HILDNER.
 - 5b. Schiller's *Wallenstein* with extracts from the *Geschichte des dreissigjährigen Kriegs*. *Three hours.* Assistant Professor WINKLER.
 - 5c. Schiller's Philosophic Writings. *Two hours.* Assistant Professor WINKLER.
 - 5d. Scientific Prose. *Two hours.* Dr. FLORER.
 - 5i. German Composition. Three sections. *Two hours.* Dr. DIEKHOFF, Dr. ROEDDER, and Dr. HILDNER.
 52. German Themes. *Two hours.* Dr. ROEDDER.
7. Goethe's *Faust*, Part I. Thomas's edition. Lectures and recitations. *Two hours.* Assistant Professor WINKLER.
9. Introduction to Middle High German. Lectures and recitations with assigned readings. Paul's *Mittelhochdeutsche Grammatik*, 4te Aufl., and Bachmann's *Mittelhochdeutsches Lesebuch*. *Three hours.* Assistant Professor MENSEL.
11. Modern German Sounds. Lectures and assigned reading. Hempl's *German Orthography and Phonology*. *Two hours.* Professor HEMPL.
13. History of German Literature (I). From the Earliest Times to the End of the Middle Ages. Lectures and readings from Max Müller's *German Classics*. *Two hours.* Assistant Professor MENSEL.
15. German Romanticism. Lectures and assigned readings. *Two hours.* Assistant Professor WINKLER.
17. The History of German Civilization. Lectures and reading of selections from Freytag's *Bilder aus der deutschen Vergangenheit*. *Two hours.* Dr. BOUCKE.
19. Old High German. Lectures based upon Braune's *Abriss der althochdeutschen Grammatik*, 2te Aufl., and reading of selections

from Braune's *Althochdeutsches Lesebuch*, 4te Aufl. *Two hours.*
Assistant Professor MENSEL.

21. Proseminary in Modern German Literature. The Storm and Stress Movement. *Two hours.* Assistant Professor WINKLER.

SECOND SEMESTER.

2. Elementary Course continued. Grammar, descriptive prose, and short stories, with practice in speaking and writing German. Six sections. *Four hours.* Dr. DIEKHOFF, Dr. FLORER, Dr. ROEDDER, Dr. BOUCKE, and Dr. HILDNER.
4. A drama of Lessing, Goethe, or Schiller, with collateral prose reading and practice in speaking and writing German. Nine sections. *Four hours.* Assistant Professors WINKLER and MENSEL, Dr. DIEKHOFF, Dr. FLORER, Dr. ROEDDER, and Dr. BOUCKE.
6. Third-Year Electives. This course may be elected as 6a, 6b, etc.
6a. Goethe's *Iphigenie*, Tasso, and Hermann and Dorothea. *Three hours.* Dr. HILDNER.
6b. Lessing's *Nathan der Weise*, *Anti-Goeze*, and *Erziehung des Menschengeschlechts*. *Three hours.* Dr. DIEKHOFF.
6c. *Laokoon*. A study of Lessing's essay with comparison of the critiques by Herder and Goethe. *Two hours.* Assistant Professor WINKLER.
6d. Historical Prose. *Two hours.* Dr. FLORER.
6e. Klee's *Deutsche Mythologie*, with supplementary reading. *Two hours.* Dr. ROEDDER.
6₁. German Composition. Continuation of Course 5₁. Three sections. *Two hours.* Dr. DIEKHOFF, Dr. ROEDDER, and Dr. HILDNER.
6₂. German Themes. Continuation of Course 5₂. *Two hours.* Dr. ROEDDER.
8. Goethe's *Faust*, Part II. Thomas's edition. *Two hours.* Assistant Professor WINKLER.
10. Methods of teaching Modern Foreign Languages. Lectures and reports. *Two hours.* Professor HEMPL.
12. German Syntax. Lectures and reports upon assigned topics. *Wunderlich, der Deutsche Satzbau; and Erdmann-Mensing, Grundzüge der deutschen Syntax.* *Two hours.* Professor HEMPL.
14. History of German Literature (II). Modern Period. *Three hours.* Assistant Professor WINKLER.
16. German Romanticism. Continuation of Course 15. *Two hours.* Assistant Professor WINKLER.
18. Modern German Civilization. Lectures and assigned readings. *Two hours.* Dr. BOUCKE.

20. The Middle-High-German Folk-epic. Lectures and reading of portions of the Nibelungenlied, Gudrun, and the minor epics. *Two hours.* Assistant Professor MENSEL.
22. The Literature of the Sixteenth Century. Lectures and reading of selections from Braune's Neudrucke deutscher Litteraturwerke des XVI und XVII Jahrhunderts. *Two hours.* Dr. FLORER.
25. Proseminary in Old High German. The Syntax of Isidor and the Monsee Fragments. *Two hours.* Assistant Professor MENSEL.

GOthic.

FIRST SEMESTER.

1. Lectures on Phonology and Morphology, and Reading of the Gospel's. Text-book: Streitberg's Gotisches Elementarbuch. *Two hours.* Professor HEMPL.

SECOND SEMESTER.

- [2. The Epistles. Heyne's Ulfilas, 9te Aufl. *Two hours.*
Course 2 is omitted in 1899-1900.]

SCANDINAVIAN.

FIRST SEMESTER.

- [2. The Elder Edda. Lectures on mythology, heroic legend, and metre. Jonsson, Eddalieder, Altnordische Textbibliothek, 2-3. *Two hours.*
Course 2 is omitted in 1899-1900.]

SECOND SEMESTER.

- [1. Old Icelandic. Introductory course. Lectures and recitations. Kahle's Altisländisches Elementarbuch. *Two hours.*
Course 1 is omitted in 1899-1900.]

ENGLISH PHILOLOGY AND GENERAL LINGUISTICS.

FIRST SEMESTER.

3. Old English (Anglo-Saxon) for Beginners. *Four hours.* Professor HEMPL.
Course 3 is intended (1) to furnish a practical introduction to the study of Old English for those who wish to devote themselves to the subject, (2) to furnish a basis for the historical study of the language.
- [5. Old-English Syntax. Professor HEMPL.
Course 5 must be preceded by Course 3. It is omitted in 1899-1900.]

7. The History of the English Language. Lectures on the most important factors in the history of the language, together with the investigation of the cause and process of certain changes in usage. *Two hours.* Professor HEMPL.
- [9. Historical English Grammar. Professor HEMPL.
Course 9 is omitted in 1899-1900.]

SECOND SEMESTER.

- [1. Middle English. *Two hours.* Professor HEMPL.
Course 1 consists of a brief introduction to the subject, the private reading of several of Chaucer's works, and the study of some of the more important questions of Chaucer's workmanship. It is omitted in 1899-1900.]
2. Principles of Linguistic Science. Lectures on the most important phases of the life and growth of language, together with the study of some of the simpler problems of comparative philology. *Two hours.* Professor HEMPL.
- [4. The Elements of Phonetics. Professor HEMPL.
Course 4 is omitted in 1899-1900.]
6. Spoken English, with special reference to American English. A study of colloquial English as distinguished from the English of books and artificial speech, with the object of determining some of the principles governing speech-mixture and the formation of dialects. The course is also intended to furnish teachers of dogmatic English a basis of judgment in determining questions of good usage. *Two hours.* Professor HEMPL.
- [8. Old-English (Anglo-Saxon) Poetry. Professor HEMPL.
Course 8 must be preceded by Course 3. It is omitted in 1899-1900.]
10. Old-English Phonology and Morphology. Lectures on the history of Old-English sounds and forms, together with the private reading of Old-English prose texts and the investigation of one or two problems. *Two hours.* Professor HEMPL.
Course 10 must be preceded by Course 3.

ENGLISH AND RHETORIC.

Courses 11, 12, and 14 are conducted on the seminary plan, the classes being divided into small sections for the presentation of theses and reports, and for extempore discussion and conference. These courses are designed for advanced students only, and are usually taken by students in their last year of residence at the University.

Courses 7, 10, 10a, 11, 12, 14, 15, and 17 will ordinarily be found suitable for graduate students as well as for undergraduates. In the case

of students who have taken these courses for their first degree, special advanced courses are provided for graduate study, after conference with the candidate. Some of the courses given in recent years are the following: The Development of the English Novel; The English Satirists of the Seventeenth and Eighteenth Centuries; The Romantic Revival in England at the close of the last Century; the Pre-Shakespearian Drama in England; Shakespeare's Histories.

Students who desire to take a Teacher's Diploma in English will be expected to take Courses 7, 10, 10a, 11, 12, 17, and either Course 3 or Courses 2b and 15.

FIRST SEMESTER.

1. Paragraph-Writing. Eight sections. *Two hours.* Mr. STRAUSS and Mr. TATLOCK.
- 1a. Theme-writing. *Two hours.* Mr. STRAUSS.
Course 1a is open only to those who have passed Course 1.
2. Science of Rhetoric. Essays in description and narration. Four sections. *Three hours.* Professor SCOTT.
Course 2 must be preceded by Course 1, and by Course 1 or Course 2 in philosophy. Course 1a is also recommended.
- 2a. Essays. Four sections. *Two hours.* Professor SCOTT.
Course 2a is intended for students who, having passed Course 2 in the second semester, desire to continue their work in composition.
3. Old English (Anglo-Saxon) for Beginners. *Four hours.* Professor HEMPL.
5. English Literature. Chaucer and his age. Two sections. *Two hours.* Mr. TATLOCK.
7. Teacher's Course. History of the English Language. *Two hours.* Professor HEMPL.
10. Principles of Literary Criticism. Lectures and discussions. *One hour.* Professor DEMMON.
Course 10 is especially designed to accompany Course 11.
11. English Literature Seminary. Study of masterpieces; More's Utopia; Bacon's Essays; Milton's Areopagitica; Carlyle's Sartor Resartus; George Eliot's Silas Marner; Spenser's Faery Queen, Book I; Shakespeare's Sonnets; Milton's Paradise Lost; Dryden's Absalom and Achitophel; Wordsworth's Excursion; Tennyson's Maud; Browning's Soul's Tragedy; Swinburne's Atalanta in Calydon. Four sections. *Two hours.* Professor DEMMON.
Course 11 must be preceded by Courses 2, 5, 6.
18. Advanced Composition. *Two hours.* Professor SCOTT.
Course 18 is intended for those who are already proficient in writing, but who feel the need of practice and criticism.

21. Development of Rhetorical Theory. An historical and comparative study of the growth of rhetorical theory from Aristotle to the present time. *Two hours.* Professor SCOTT.
Course 21 is open only to graduate students.
22. Studies in the text of Shakespeare. *Two hours.* Professor DEMMON.
Course 22 is designed primarily for graduate students. The aim is to illustrate the methods of textual study as applied to a play like Hamlet, and the difficulties to be overcome in establishing a text. The McMillan Shakespeare Library affords a very full apparatus for these studies.

SECOND SEMESTER.

1. Paragraph-Writing. Three sections. *Two hours.* Mr. STRAUSS.
- 1a. Theme-Writing. Two sections. *Two hours.* Mr. TATLOCK.
See note to Course 1a in first semester.
2. Science of Rhetoric. Essays in exposition and argument. Four sections. *Three hours.* Professor SCOTT.
See note to Course 2 in first semester.
- 2b. Essays. Four sections. *Two hours.* Professor SCOTT.
Course 2b is intended for students who, having passed Course 2 in the first semester, desire to continue their work in composition.
4. English Literature. From the Conquest to Chaucer. *Two hours.* Mr. TATLOCK.
Course 4 should be preceded by Course 3.
6. English Literature. From Chaucer to Milton. *Three hours.* Mr. TATLOCK.
- 6a. English Literature. From Milton to Wordsworth. *Three hours.* Mr. STRAUSS.
10. Principles of Literary Criticism. Lectures and discussions. *One hour.* Professor DEMMON.
Course 10a must be preceded by Course 10. It is designed to accompany Course 12.
12. Shakespeare Seminary. Plays selected: A Midsummer Night's Dream; The Merchant of Venice; As You Like It; Twelfth Night; The Tempest; Richard III; the two parts of Henry IV; Henry V; Romeo and Juliet; Hamlet; Othello; King Lear; Macbeth; Coriolanus. Four sections. *Two hours.* Professor DEMMON.
Course 12 must be preceded by Course 11.
14. American Literature Seminary. Authors studied: Irving, Cooper, Bryant, Emerson, Hawthorne, Longfellow, Whittier, Poe, Holmes, Thoreau, Lowell, Taylor, Howells and James. *Two hours.* Professor DEMMON.

Course 14 must be preceded by Course 11. Representative works of the authors named are studied and compared with masterpieces of British authors, and an attempt made to discover the distinctively American element.

15. Principles of Style. Inductive study of masterpieces of English prose, with a view to verifying rhetorical principles. Lectures, readings, discussions. *Two hours.* Professor SCOTT.

Course 15 is open to those who have taken Course 2.

17. Teacher's Course. Methods of teaching English Composition and Rhetoric. *Two hours.* Professor SCOTT.

Course 17 must be preceded by Course 2.

ELOCUTION AND ORATORY.

For information regarding the University oratorical associations, and the annual contests in oratory and debate, which afford opportunity for a practical application of the principles taught, see page 37.

FIRST SEMESTER.

1. Elocution. Exercise in vocal culture, breathing, position, and technique of gesture; pronunciation and emphasis; the Rush and Delsarte philosophies; elements of Quality and Force of voice, with their applications. Delivery of short extracts from masterpieces of oratory. Two sections. *Two hours.* Professor TRUEBLOOD.

3. Study of Great Orators: Ancient Orators, and Modern Orators of Continental Europe. Lectures on methods of public address and sources of power. Study of representative selections. Preparation and delivery of speeches. *Two hours.* Professor TRUEBLOOD.

Course 3 must be preceded by Courses 1 and 2, and by Courses 1 and 2 in English.

5. Oral Discussions. Application of the principles of formal logic and elocution in debating leading questions of the day. Preparation of briefs. *Two hours.* Professor TRUEBLOOD.

Course 5 is designed to develop readiness of extemporization and is recommended to those who desire to enter the inter-collegiate debates. It must be preceded by Courses 1 and 2, by Courses 1 and 2 in English, and by a course in elementary logic.

SECOND SEMESTER.

2. Elocution. Exercises in vocal culture continued; elements of Pitch and Time with illustrations; study and application of the principles of action; delivery of short extracts from masterpieces of oratory. Two sections. *Two hours.* Professor TRUEBLOOD.

Course 2 must be preceded by Course 1.

4. Study of Great Orators: English and American Orators. Lectures. Study of masterpieces. Preparation of speeches. *Two hours.* Professor TRUEBLOOD.
Course 4 must be preceded by Courses 1, 2, 3.
- 6b. Shakespearian Reading. Critical study and reading of two of Shakespeare's plays. *Two hours.* Professor TRUEBLOOD.
Course 6b must be preceded by Courses 1 and 2.

MUSIC.

The courses in music are open to students who evince sufficient musical ability to pursue them with profit. Courses 1 and 2 are introductory to the technical and critical courses, and no advanced credit will be allowed for them. Course 1a is open to students who possess good voices and can read readily at sight. Courses 3 to 8 are technical and represent four years' work. Courses 10a and 11b are intended primarily for graduate students, but are open to undergraduates who are fitted to do advanced work. Courses 9a, 9b, 11a, 11b, and 12 are open to students who wish to study the historical development of music, as well as its significance as an art.

FIRST SEMESTER.

1. Fundamental Principles of Musical Science. *Two hours.* Professor STANLEY.
- 1a. Choral Music. *Two hours.* Professor STANLEY.
3. Science of Harmony. *Two hours.* Professor STANLEY.
- [5a. Simple Counterpoint. *Two hours.* Professor STANLEY.
Course 5a is omitted in 1899-1900.]
- [6a. Double Counterpoint. *Two hours.* Professor STANLEY.
Course 6a is omitted in 1899-1900.]
- [7. Canon; Fugue. *Two hours.* Professor STANLEY.
Course 7 is omitted in 1899-1900.]
- 9a. The History of Music, including Modern Opera. Lectures. *Two hours.* Professor STANLEY.
In course 9a the instruments in the Stearns collection are used for illustration.
- [10a. Free Composition. Instrumentation. *Two hours.* Professor STANLEY.
Course 10a is omitted in 1899-1900.]
- [11a. Musical Criticism. Lectures. *One hour.* Professor STANLEY.
Course 11a is omitted in 1899-1900.]

SECOND SEMESTER.

2. Fundamental Principles of Musical Science, including Elementary
6 Harmony. *Two hours.* Professor STANLEY.

4. Science of Harmony. *Two hours.* Professor STANLEY.
- 5*b*. Simple Counterpoint. *Two hours.* Professor STANLEY.
Course 5*b* is omitted in 1899-1900.]
- [6*b*. Double Counterpoint and Simple Forms. *Two hours.* Professor STANLEY.
Course 6*b* is omitted in 1899-1900.]
- [8. Canon; Fugue; Sonata Form. *Two hours.* Professor STANLEY.
Course 8 is omitted in 1899-1900.]
- 9*b*. The History of Music. Wagner's Music Dramas. Lectures. *Two hours.* Professor STANLEY.
- 11*b*. Musical Criticism. Lectures. *One hour.* Professor STANLEY.
Course 11*b* is omitted in 1899-1900.]
12. Music in its Ethical Relations. Lectures. *One hour.* Professor STANLEY.
Course 12 is omitted in 1899-1900.]

HISTORY.

In general, Courses 1 and 2 must precede all other courses in history. Students are urged to take them in the order named. Those, however, who find it necessary to begin their work in history the second semester may take Course 2 before taking Course 1. Or they may take Course 8 instead of Course 2.

FIRST SEMESTER.

1. The General History of Europe from the Fourth Century to the close of the Middle Ages. Lectures and quizzes on lectures and on assigned reading. *Three hours.* Assistant Professor DOW.
3. The Political and Constitutional History of England to the accession of Henry VIII. Lectures and quizzes on lectures and on assigned reading. *Three hours.* Dr. CROSS.
5. The Constitutional History of England. An advanced course for the study of the origin and growth of English administrative, legal, and parliamentary institutions, to the reign of Edward I, based on documents, chiefly those contained in Stubbs's Select Charters. *Two hours.* Dr. CROSS.
Course 5 presupposes such knowledge of English history as may be obtained from Courses 3 and 4.
7. The Political and Constitutional History of Greece to the Roman Conquest. Text-book: Oman; supplemented by lectures. *Three hours.* Dr. CROSS.
9. Studies in the history of France during the Capetian period, with special reference to institutions. Lectures, reports, discussions. *Three hours.* Assistant Professor DOW.

11. The History of Europe since 1789. Lectures and quizzes in sections. *Three hours.* Professor HUDSON.
14. The Political and Constitutional History of the United States. Lectures. Quizzes in sections on lectures and on assigned reading. *Three hours.* Professor McLAUGHLIN.
18. Research Work in American History, with lectures. *Two hours.* Professor McLAUGHLIN.

Course 18 is open only to graduate students and to seniors who receive special permission.

19. Constitutional Law and Political Institutions of the United States. Text-books and lectures. *Three hours.* Professor McLAUGHLIN.
21. English Political Institutions. A study of the democratic movement of the Nineteenth Century. Lectures. *Two hours.* Professor HUDSON.
- 21a. Supplementary to Course 21, the object being to direct the reading of students in connection with the topics covered by the lectures. *One hour.* Professor HUDSON.
23. Seminary. The Partition of Africa among the European Powers. *Two hours.* Professor HUDSON.

Course 23 is open only to graduate students and to seniors who receive special permission.

SECOND SEMESTER.

2. The General History of Europe from the close of the Middle Ages to the Eighteenth Century. Lectures and quizzes on lectures and on assigned reading. *Three hours.* Assistant Professor DOW.
4. The Political and Constitutional History of England since the accession of Henry VIII. Lectures and quizzes on lectures and on assigned reading. *Three hours.* Dr. CROSS.
6. The Constitutional History of England during the Seventeenth Century. An advanced course for the study of the struggle between the Stuart kings and the Parliament, based on Gardiner's Constitutional Documents of the Puritan Revolution, and similar material. *Two hours.* Dr. CROSS.

Course 6 presupposes such knowledge of English history as may be obtained from Courses 3 and 4.

8. The Political and Constitutional History of Rome to the fall of the Roman Empire. Text-book, supplemented by lectures. *Three hours.* Dr. CROSS.
10. Studies in the history of France during the Fourteenth and Fifteenth Centuries, with special reference to the development of institutions. Lectures, reports, discussions. *Three hours.* Assistant Professor DOW.

12. Present Problems of European Politics. Lectures. *Two hours.*
Professor HUDSON.
Course 12 must be preceded by Course 11.
- 12a. Supplementary to Course 12. Quizzes on lectures and on assigned reading. Two sections. *One hour.* Professor HUDSON.
13. American Colonial History. Lectures and assigned reading.
Three hours. Professor McLAUGHLIN.
15. The Political and Constitutional History of the United States.
Lectures. Quizzes in sections on lectures and on assigned reading. *Three hours.* Professor McLAUGHLIN.
Course 15 is a continuation of Course 14.
17. Research Work in the History of the United States. *Two hours.*
Professor McLAUGHLIN.
Course 17 is open only to graduates and to seniors who receive special permission.
20. Course for Teachers. *One hour.* Professor McLAUGHLIN,
Assistant Professor DOW, and Dr. CROSS.
Course 20 is open only to students who receive special permission.
Candidates for the teacher's diploma in history are expected to elect this as one of their courses.
22. The Political Institutions of Germany, France, Switzerland, and other European countries. Lectures. *Two hours.* Professor HUDSON.
- 22a. Supplementary to Course 22, the object being to direct the reading of students in connection with the topics covered by the lectures. *One hour.* Professor HUDSON.
24. Seminary. Problems raised by the decay of China and the advance of Russia in the Far East. *Two hours.* Professor HUDSON.
Course 24 is open only to graduate students and to seniors who receive special permission.

PHILOSOPHY.

The courses in philosophy are not open to first-year students. Courses 1, 2a, 2b, 3, 4, 7, 8, 14, 15, 17a, 17b, 25, 26, 27 are primarily for undergraduates. The other courses are for both undergraduates and graduates. Students should consult with the instructors before making elections.

Courses of special value to philosophical students are also given in the departments of Greek, Latin, French, German, Italian, English Literature, History, Pedagogy, Political Economy, Mathematics, Physics, Physiology, and Biology.

The Philosophical Society holds regular meetings throughout the

entire year. The meetings are conducted largely by the students, though at some of them addresses are given by members of the Faculty or by persons connected with other institutions.

The greater part of the philosophical library of the late Professor George S. Morris is available for use in the seminary room by graduates and special students engaged in research.

FIRST SEMESTER.

I. Introductory Course.

1. Philosophical Introduction. Part I, first half of semester. Meaning and Scope of Philosophy. Lectures, exercises, discussions. Text-book: Wenley's Outline Introductory to Kant's Critique of Pure Reason. Part II, second half of semester. *Either* (a) Elements of Logic, or (b) Elements of Psychology. Lectures, exercises, discussions. Text-books: (a) Minto's Logic Inductive and Deductive; (b) Titchener's An Outline of Psychology. *Three hours.* Part I, Professor WENLEY and Dr. TOWER; Part II (a), Dr. REBEC; Part II (b), Dr. PILLSBURY.

Course 1 is also given in the second semester.

II. Courses in History of Philosophy.

3. History of Ancient Philosophy. Lectures, reading, theses. *Three hours.* Professor LLOYD.
5. Plato's Republic. Collateral reading and theses. Text-books: Davies and Vaughan's translation; Bosanquet's Companion to the Republic. *Two hours.* Dr. REBEC.
- [7. British Philosophy. Lectures and assigned reading of Locke, Berkeley, and Hume. *Two hours.* Dr. REBEC.
Course 7 is omitted in 1899-1900, but may be expected in 1900-01.]
- 7a. The First Period of Modern European Philosophy; Descartes, Spinoza, Leibnitz. Lectures, assigned reading, discussions, exercises. *Two hours.* Dr. TOWER.
8. Philosophy in America. Edwards and the theological period; the New England school; influence of the Scottish school and of Mr. Spencer; modern movements in psychology and systematic philosophy. *Two hours.* Dr. REBEC.
9. Kant and the Critique of Pure Reason. Text-books: Watson's Selections from Kant, and Wenley's Introduction to the Critique. Discussion, reading, theses. *Two hours.* Professor WENLEY and Dr. TOWER.
13. Philosophy of History. *Two hours.* Professor LLOYD.

III. Courses in Ethics.

- [14. The Development of Ethical Ideas (I.) Lectures on early morality; the moral conceptions of Palestine, Greece, and Rome; and the conditions into which the ethics of Christianity entered. Lectures, reading, theses. Text-books: Wenley's Preparation for Christianity in the Ancient World; Cornill's Prophets of Israel. *Two hours.* Professor WENLEY.

Course 14 is omitted in 1899-1900, but may be expected in 1900-01.]

15. The Development of Ethical Ideas (II.) Lectures on the moral conceptions of mediævalism—the Latin Church, Monasticism, Chivalry, the Crusades; the Reformation and Renaissance; and the foundations of modern ethics, with special reference to the French Revolution, the Declaration of Independence, and the Socialistic Movement. *Two hours.* Professor WENLEY.

IV. Special Courses.

19. Philosophy of Religion. Lectures, reading, theses. Special attention is given to the rise and disappearance of Natural Theology; to Speculative Theology; and to strictly contemporary problems. Text-book: Wenley's Contemporary Theology and Theism. *Two hours.* Professor WENLEY.

- 19a. Metaphysics—a criticism of some current scientific ideas. Lectures, reading, reports. *Two hours.* Professor LLOYD.

20. Æsthetics. Lectures, reading, reports. *Two hours.* Dr. REBEC.

22. Graduate Seminary. (a) Ancient Philosophy; Professors WENLEY and LLOYD and Dr. REBEC. (b) History of Philosophy; Professor LLOYD and Dr. TOWER. (c) Modern Philosophy; Professors WENLEY and LLOYD and Dr. REBEC. (d) Ethics and Metaphysics; Professors WENLEY and LLOYD and Dr. TOWER. (e) Logic and Æsthetics; Dr. REBEC. (f) Epistemology; Dr. TOWER. (g) General, Systematic, and Experimental Psychology; Dr. PILLSBURY.

Course 22 is arranged to give flexibility to the work of the more advanced students.

V. Courses in Psychology.

25. Beginners' Course in Experimental Psychology. Text-book; Sanford's Laboratory Course. *Three hours.* Dr. PILLSBURY.

Course 25 is open only to those who have completed Course 1 or its equivalent.

29. Genetic Psychology; psychological development with special reference to the animal and child. *Two hours.* Dr. PILLSBURY.

Course 29 must be preceded by Course 25 or Course 26.

30. Advanced Course in Experimental Psychology. Original investigation. This course may be elected as Course 30, *two hours*; 30a, *three hours*; or 30b, *six hours*. Dr. PILLSBURY.

SECOND SEMESTER.

I. Introductory Course.

1. Philosophical Introduction. Same as in first semester. *Three hours*. Professor WENLEY, Dr. REBEC, Dr. PILLSBURY, and Dr. TOWER.
- 2a. Second Course in Logic. Lectures. Text-book: Bosanquet's *Essentials of Logic*. *Two hours*. Dr. REBEC.
Course 2a should be preceded by Course 1.
- 2b. General Psychology. Text-books: Lloyd's *Dynamic Idealism*, and Külpe's *Outlines of Psychology*. *Two hours*. Dr. TOWER.
Course 2b should be preceded by Course 1.

II. Courses in History of Philosophy.

4. History of Modern Philosophy. Lectures, reading, reports, theses. *Three hours*. Professor LLOYD.
- [10. Hegel's System. Wallace's *Prolegomena*, and *Logic of Hegel*. *Two hours*. Professor WENLEY.
Course 10 is omitted in 1899-1900, but may be expected in 1900-01.]
11. Philosophy since Hegel. *Two hours*. Professor LLOYD.
Course 10 and Course 11 are given in alternate years.
12. Special studies in the Philosophy of the Nineteenth Century. Hegel's System. Discussion, reading, reports, theses. *One hour*. Professor LLOYD.
Course 12 is intended to supplement Courses 10 and 11. In 1900-01 the subject treated will be Philosophy since Hegel.

III. Courses in Ethics.

6. Aristotle's Ethics. Collateral reading and theses. Text-book: Peters's Translation. *Two hours*. Dr. REBEC.
- 17a. Metaphysic of Ethics. Evolution and other modern conceptions in their bearing upon ethical theory. Lectures, discussions, exercises. *Two hours*. Professor WENLEY.
- 17b. Systematic Ethics. Practical philosophy. Ethical problems in their relation to individual and social life and conduct. Lectures, discussions, exercises. Text-book: Dewey's *The Study of Ethics—A Syllabus*. *Two hours*. Professor LLOYD.
18. Special Studies in Ethics. Assigned reading, discussions, reports. *One hour*. Dr. TOWER.

IV. Special Courses.

16. Political Philosophy. A critical study of society; the principles of political association and evolution; relations of political and industrial institutions to fundamental ideas of philosophy and religion; outline of the history of the theories of society; applications to present day social problems. Lectures, discussions, theses. *Two hours.* Professor LLOYD.
21. Special Æsthetics. Relation of Philosophy to the interpretation of Art, especially of Poetry. Lectures, reading, analysis of selected masterpieces. *Two hours.* Dr. REBEC.
23. Graduate Seminary. Same as in first semester. Professors WENLEY and LLOYD, Dr. REBEC, Dr. PILLSBURY, and Dr. TOWER.
24. Philosophical Implications of Movements of Thought in the Nineteenth Century. Lectures, discussions. Special reference to Evolution; Materialism and Agnosticism; the comparative method in history, criticism, and religion; philosophical systems; Monism and the future. *Two hours.* Professor WENLEY.

V. Courses in Psychology.

26. Beginners' Course in Experimental Psychology. Text-book: Sanford's Laboratory Course. *Three hours.* Dr. PILLSBURY.
Course 26 is the same as Course 25 in first semester.
27. Second Course in Experimental Psychology. Continuation of Course 25. Text-book: Sanford's Laboratory Course. *Three hours.* Dr. PILLSBURY.
28. Systematic Psychology. Lectures, discussions, essays. A detailed discussion of the facts and principles of psychology in the light of introspection, experiment, and pathology. *Three hours.* Dr. PILLSBURY.
31. Advanced Course in Experimental Psychology. Original investigation. This course may be elected as Course 31, *two hours*; 31a, *three hours*; or 31b, *six hours.* Dr. PILLSBURY.
Course 31 is the same as Course 30 in first semester.

THE SCIENCE AND ART OF TEACHING.

Students who wish to prepare themselves for ordinary class-room duties, are advised to pursue Course 1, if they can take but one; those who propose to assume the management of high schools or graded schools, should take Course 5 in connection with Course 1. In both cases, however, it is desirable for them to pursue Course 2. The order in which Courses 1 and 2 are taken is not material. Students are recommended to take Course 1 or Course 2 before the historical courses. In general, it is not advisable for students to elect pedagogical studies until

they have obtained at least 48 hours of credit. Exception to this rule may be made for good and sufficient reasons, as, for example, in the case of students who have had practical experience in teaching.

In connection with the work of instruction a course of public lectures on the more important phases of education and teaching is given by members of the several faculties of the University.

The Pedagogical Society holds regular meetings throughout the entire year. The meetings are conducted largely by the students, though at some of them addresses are given by members of the Faculty or by other persons.

For the conditions on which the Teacher's Diploma and the Teacher's Certificate are given, see pages 115 and 116.

FIRST SEMESTER.

1. **Practical Pedagogy.** The arts of teaching and governing; methods of instruction and general school-room practice; school hygiene; school law. Lectures with reading. Hinsdale's *Teaching the Language-Arts*, and *How to Study and Teach History*. *Four hours.* Professors B. A. HINSDALE and WHITNEY.
3. **History of Education, Ancient and Mediæval.** Recitations and lectures. Text-book: Compayré's *History of Pedagogy*. The subjects treated in the lectures are Oriental, Greek, and Roman education, and the rise and early development of Christian schools. *Three hours.* Professor B. A. HINSDALE.
5. **School Supervision.** General school management, the art of grading and arranging courses of study, the conduct of institutes, etc. Recitations and lectures. Text-book: Payne's *Chapters on School Supervision*. *Three hours.* Professors B. A. HINSDALE and WHITNEY.
9. **Child Study.** Historical sketch; a discussion of the factors which influence intellectual development; methods of child study; physiology and psychology of childhood; study of special problems, such as the education of the nervous system, the hygiene of studies, motor ability, temperament, period of adolescence, children's drawings, interests, literature, fears, angers, lies, etc. The aim throughout is to treat each topic from a distinctly practical pedagogical point of view. Recitations and lectures. Text-book: Taylor's *A Study of the Child*. *Two hours.* Professor WHITNEY.
10. **Social Phases of Education.** A consideration of the school as a social factor in its relations to the child, to the home, to the church, and to the state; also a discussion of the relation of education to vocation and to crime. Lectures and recitations.

Text-book: Dutton's Social Phases of Education. *One hour.*
Professor WHITNEY.

SECOND SEMESTER.

2. Theoretical and Critical Pedagogy. The principles underlying the arts of teaching and governing. Lectures and readings. Hinsdale's Studies in Education. *Four hours.* Professor B. A. HINSDALE.
4. History of Modern Education. Recitations and lectures. Text-book: Compayré's History of Pedagogy. The topics dealt with in the lectures are the movements of modern educational thought and practice. *Three hours.* Professor B. A. HINSDALE.
6. The Comparative Study of Educational Systems, Domestic and Foreign. Lectures and reading. *Two hours.* Professor B. A. HINSDALE.
- [7. History of Education in the United States. The course deals with the salient features of the subject, from the earliest time, but particular attention is paid to the state of education in the colonies, and to the common school revival in the first half of the present century. The recent university development is also described. Lectures and reading. Hinsdale's Horace Mann and the Common School Revival in the United States and Documents Illustrative of American Educational History are subjects of examination. *One hour.* Professor B. A. HINSDALE.
Course 7 is omitted in 1899-1900, but may be expected in 1900-01.]
8. History of Educational Thought. The course deals with Greek and Roman antiquity and the Middle Ages, and with the principal of the great movements of thought in modern times. Lectures and reading. Davidson's Aristotle and Ancient Educational Ideals, West's Alcuin and the Rise of Christian Schools, and Browning's Educational Theories are principal books of reference. *One hour.* Professor B. A. HINSDALE.

POLITICAL ECONOMY AND SOCIOLOGY.

Political Economy.—The courses in political economy are classified as undergraduate, intermediate, and graduate courses. Courses 2, 3, 4, 5 are primarily designed for undergraduate students; of these, Course 2 is required for admission to all other courses except to Course 3. Course 3 should if possible precede Course 2. The intermediate courses, viz., Courses 6, 8, 9, 11, 12, 13, 17, 18, may also be taken by any student and will count as part of the regular work of graduate students. The graduate courses, viz., Courses 25, 26, 27, 28, are not open to undergraduate

students who pursue their work on the credit system, but may be taken by those who are working on the university system.

Sociology.—Work in sociology may begin with Course 19 or with Course 22. The latter should be chosen by those who care only for the practical aspects of the subject, and who intend to take only one course. Those who plan to take all the work should complete both these courses before their senior year.

FIRST SEMESTER.

2. Elements of Political Economy. Lectures and quizzes. *Four hours.* Professor TAYLOR.
5. Problems in Political Economy. The problems studied are the following: The Railway Problem, Industrial Crises, Free Trade and Protection, Industrial Reforms, Labor Legislation, and Taxation. Lectures and quizzes. *Four hours.* Professor ADAMS.
Course 5 is designed as the supplement of Course 2, by which it must be preceded, and is introductory to Courses 4, 6, 8, 9, 11, 12, 13, although it is not required for these courses.
9. Money and Banking. *Two hours.* Professor TAYLOR.
13. The Theory and Practice of Statistics. *One hour.* Assistant Professor COOLEY.
Course 13 treats statistics as a method of social research, an instrument important not only to economists and statisticians but also to all who wish to qualify themselves to understand or criticise current social and political discussion.
17. Seminary in Economics. *Two hours.* Professor ADAMS.
19. Principles of Sociology. Lectures and quizzes. *Four hours.* Assistant Professor COOLEY.
Course 19 aims at a systematic and comprehensive study of the underlying principles of social science. It embraces some historical review of the development of institutions, but is chiefly concerned with an analysis of existing society. Each student is assigned special reading, and required to write a critical essay upon it.
21. Historical development of Sociological Thought. Study of Comte, Spencer, Ward, Giddings, and others. For advanced students. *Two hours.* Assistant Professor COOLEY.
25. Critical Studies in Economics and Sociology. *Three hours.* Professors ADAMS and TAYLOR and Assistant Professor COOLEY.
Course 25 is especially intended for graduate students, but is open to seniors specializing in political economy who satisfy the instructors of their fitness for the work.

27. Journal Club. Conducted by the instructors in this department in connection with the instructors in the department of history.

SECOND SEMESTER.

3. History of the Development of Industrial Society. Lectures and quizzes. *Three hours.* Professor ADAMS.
Course 3 is designed to be introductory to all courses in political economy. It is not, however, required for admission to such courses. It embraces a history of English industrial society from the twelfth century to the present time, and is designed to show how modern industrial customs and rights came into existence. It is desirable that it should be preceded by Course 1 in history.
4. Principles of the Science of Finance. Text-book. Two sections. *Three hours.* Professor TAYLOR.
6. The Transportation Problem. Lectures and text-book. *Two or three hours.* Professor ADAMS.
9. Socialism. History and Theory. *Two hours.* Professor TAYLOR.
- [11. Industrial History of the United States. *Two hours.* Professor TAYLOR.
Course 11 is omitted in 1899-1900, but may be expected in 1900-01.]
12. History of Political Economy. Text-book, with supplementary lectures and reports. *Two hours.* Professor TAYLOR.
Course 12 is important to all students specializing in political economy.
14. Seminary in Economics. *Two hours.* Professor ADAMS.
Course 14 is open only to those who receive special permission.
22. Problems in Sociology. Lectures, quizzes, and assigned reading. *Four hours.* Assistant Professor COOLEY.
Course 22 embraces a study of the laws of population, the treatment of criminals, poor relief, the assimilation of immigrants, the development of great cities, and other sociological questions of present importance.
24. Psychological Sociology. For advanced students. *Two hours.* Assistant Professor COOLEY.
26. Critical Studies in Economics and Sociology. Continuation of Course 25. *Three hours.* Professors ADAMS and TAYLOR and Assistant Professor COOLEY.
28. Journal Club. Conducted by the instructors in this department in connection with the instructors in the department of history.

INTERNATIONAL LAW.

FIRST SEMESTER.

1. Lecture on International Law. *Two hours.* President ANGELL.
Course 1 is open only to those who have completed two courses in history; Course 2 is especially recommended as one of the two.

SECOND SEMESTER.

2. History of Treaties. *Two hours.* President ANGELL.
Course 2 must be preceded by Course 1.

BIBLIOGRAPHY.

FIRST SEMESTER.

1. Historical, Material, and Intellectual Bibliography. Lectures.
One hour. Professor R. C. DAVIS.

MATHEMATICS.

Courses 1, 2, 3, 4, 6 are identical with courses prescribed for students in the Department of Engineering. Courses 1a, 2a, 3a, 4a, to be taken in their order, are intended for other students; Course 1a being required for the degree of B.L., and 1a, 2a for the degrees of A.B., Ph.B., and B.S.

Courses 1, 1a, 2, 2a, 2b, 3, 3a, 4, 4a, 6 are intended primarily for undergraduates; Courses 5, 7, 8, 9, 10, 12, 13, 15, 19, 20 are for undergraduates and graduates; Courses 11, 14, 16, 17, 18, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30 are primarily for graduates, though undergraduates of exceptional ability are admitted by special permission.

FIRST SEMESTER.

1. Algebra and Analytic Geometry (I). Four sections. *Four hours.*
Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
- 1a. Plane Trigonometry and Algebra. Eleven sections. *Three hours.*
Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
3. Calculus. Four sections. *Five hours.* Professor ZIWET, Assistant Professor MARKLEY, and Mr. HALL.
3. Calculus. Four sections. *Five hours.* Professor ZIWET, Assistant Professor MARKLEY, and Mr. HALL.
- 3a. Calculus (I). *Four hours.* Professor BEMAN.
5. Solid Analytic Geometry. *Two hours.* Professor BEMAN.
6. Calculus and Mechanics (II). Three sections. *Four hours.* Professor ZIWET and Dr. GLOVER.
7. Projective Geometry (I). *Three hours.* Assistant Professor MARKLEY.
9. Differential Equations. *Three hours.* Professor BEMAN.

11. Theory of Functions (I). *Three hours.* Assistant Professor MARKLEY.
12. Higher Algebra (I). *Three hours.* Dr. GLOVER.
16. Advanced Mechanics (II). *Two hours.* Professor ZIWET.
19. Teacher's Seminary. Algebra. *Two hours.* Professor BEMAN.
Course 19 is open only to those who have completed Courses 1, 2, 3, 4, or 1a, 2a, 3a, 4a.
21. Advanced Differential and Integral Calculus (I). *Two hours.* Professor BEMAN.
23. Theory of Substitutions (I). *Two hours.* Dr. GLOVER.
25. Partial Differential Equations. *Two hours.* Professor ZIWET.
- [27. Theory of Numbers (I). *Two hours.* Assistant Professor MARKLEY.
Course 27 is omitted in 1899-1900.]
- [29. Theory of Invariants. *Two hours.* Dr. GLOVER.
Course 29 is omitted in 1899-1900.]

SECOND SEMESTER.

2. Analytic Geometry (II). Four sections. *Four hours.* Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
- 2a. Plane Analytic Geometry. Eleven sections. *Four hours.* Professor ZIWET, Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
- 2b. Spherical Trigonometry. *Two hours.* Dr. GLOVER.
4. Calculus and Mechanics (I). Four sections. *Five hours.* Professor ZIWET, Assistant Professor MARKLEY, and Mr. HALL.
- 4a. Calculus (II). *Four hours.* Professor BEMAN.
8. Projective Geometry (II). *Three hours.* Assistant Professor MARKLEY.
10. Quaternions. *Credit arranged with instructor.* Professor BEMAN.
13. Higher Algebra (II). *Three hours.* Dr. GLOVER.
14. Theory of Functions (II). *Three hours.* Assistant Professor MARKLEY.
15. Advanced Mechanics (I). *Three hours.* Professor ZIWET.
- [17. Linear Differential Equations. *Two hours.* Professor BEMAN.
Course 17 is omitted in 1899-1900.]
18. Higher Plane Curves. *Two hours.* Professor BEMAN.
20. Teacher's Seminary. Geometry. *Two hours.* Professor BEMAN.
Course 20 is open only to those who have completed Courses 1, 2, 3, 4, or 1a, 2a, 3a, 4a.
22. Advanced Differential and Integral Calculus (II). *Two hours.* Professor BEMAN.
24. Theory of Substitutions (II). *Two hours.* Dr. GLOVER.
26. Partial Differential Equations (II). *Two hours.* Professor ZIWET.

- [28. Theory of Numbers (II). *Two hours.* Assistant Professor MARKLEY.
Course 28 is omitted in 1899-1900.]
- [30. Theory of Invariants (II). *Two hours.* Dr. GLOVER.
Course 30 is omitted in 1899-1900.]

PHYSICS.

FIRST SEMESTER.

2. Heat, Electricity, and Magnetism. Lectures and recitations. *Five hours.* Dr. A. TROWBRIDGE.
Course 2 must be preceded by Course 1 and by a course in general or in analytical chemistry.
3. Physical Laboratory Work for Beginners. This course may be elected as *3a, three hours*, or *3b, two hours*. Professor REED and Dr. A. TROWBRIDGE.
Course 3 must be preceded by Course 1. It is also given in the second semester, and then may be accompanied by Course 1. Students presenting note-books from High School physical laboratories approved by this department, by electing *3a*, may be allowed *three hours* of credit for *two hours* of work.
5. Electrical Measurements. Lectures, recitations, laboratory work. This course may be elected as *5a, four hours*, or *5b, three hours*. Professor PATTERSON and Dr. GUTHE.
Course 5 must be preceded by Courses 1, 2, and *3a, 3b*, or *3c*. A knowledge of calculus is required.
6. Sound. Lectures, recitations, laboratory work. *Four hours.* Professor REED.
Course 6 must be preceded by Course 2 and by Course *3a* or *3b*. A knowledge of calculus is required.
7. Electricity and Magnetism. *Three hours.* Professor PATTERSON.
Course 7 must be preceded by Course 2. A knowledge of calculus is required.
8. Heat. Laboratory work. *Two hours.* Dr. GUTHE.
Course 8 must be preceded by Course 2.
9. Theory of Heat: Preston. *Two hours.* Dr. GUTHE.
13. Geometrical Optics. *Two hours.* Professor REED.
Course 13 must be preceded by Course 1. A knowledge of calculus is required.
14. Sound. Advanced laboratory work. *Two hours.* Professor REED.
Course 14 must be preceded by Course 6.

SECOND SEMESTER.

1. Mechanics, Sound, and Light. Lectures and recitations. *Five hours.* Professor REED.

For Course 1 a knowledge of plane trigonometry is indispensable.

3. Physical Laboratory Work for Beginners. This course may be elected as *3a, three hours, 3b, two hours, or 3c, three hours.* Dr. GUTHE and Dr. A. TROWBRIDGE.

See note to Course 3 in first semester. Course 3c is designed to prepare for the study of dynamo-electric machinery.

4. Primary and Secondary Batteries. Recitations and laboratory work. *Two hours.* Dr. GUTHE.

Course 4 must be preceded by Courses 1, 2, *3a* or *3b*, and a course in general or in analytical chemistry.

10. Electricity and Magnetism. *Two hours.* Professor PATTERSON. Course 10 must be preceded by Course 7.

11. Theory of Light: Preston. Recitations and laboratory work. *Four hours.* Professor REED.

Course 11 must be preceded by Course 6. A knowledge of calculus is required.

12. Electrical Measurements. Continuation of Course 5. Lectures and laboratory work. *Three hours.* Dr. GUTHE and Dr. A. TROWBRIDGE.

15. Light. Advanced laboratory work. *Two hours.* Professor REED.

Course 15 must be preceded by Course 11.

16. Theories of Solution, Electrolytes, and the Voltaic Cell. Lectures and laboratory work. *Three hours.* Dr. GUTHE.

Course 16 must be preceded by Course 5 and by Courses 1 and 4 in general chemistry.

17. Alternate Current Phenomena: Steinmetz. *Two hours.* Professor PATTERSON.

GENERAL CHEMISTRY.

Before beginning the study of general chemistry students should complete Course 1 in physics, or should have had at least a year's work in physics in a good high school. Students who enter upon the study of chemistry with the intention of acquiring more than the rudiments of the subject, should take Courses 1, 2, 3, 4, 5; these courses are also a preparation for the teaching of chemistry, and are necessary before obtaining a teacher's certificate in chemistry. The research laboratory is intended for graduates and advanced undergraduates.

FIRST SEMESTER.

1. Elementary Inorganic Chemistry. Experimental lectures and recitations. *Three hours.* Mr. HIGLEY.
Course 1 is also given in the second semester.
6. The History of Chemistry. Lectures. *Two hours.* Professor FREER.
Course 6 must be preceded by Courses 1, 2, 4, 5, and also requires a good knowledge of organic chemistry. The course is intended for undergraduates but is also suitable for graduates.

EITHER FIRST OR SECOND SEMESTER.

2. Laboratory Work in General Inorganic Chemistry. *'Credit arranged with instructors.* Mr. HIGLEY, Mr. LICHTY, and Dr. HULETT.
Course 2 must be preceded or accompanied by Course 1 or an equivalent. It is supplementary to Course 1 and covers in the laboratory the ground covered by lectures in Course 1. Students should elect at least five hours of laboratory work in Course 2 during the year, in order to complete the beginning work in inorganic chemistry.
3. Continuation of Course 2. Laboratory work in advanced inorganic chemistry. *Five hours.* Mr. HIGLEY, Mr. LICHTY, and Dr. HULETT.
Course 3 is intended as an introduction to analytical chemistry; it must be preceded by at least *five hours* in Course 2.
4. Elementary Theoretical and Physical Chemistry. Lectures. *Three hours.* Dr. S. L. BIGELOW.
Course 4 is necessary for all students who wish to acquire more than a very elementary knowledge of chemistry. It must be preceded by Courses 1 and 2, and either preceded or accompanied by Course 3 or Course 5.
- 3a. Elementary Physical Chemistry. Laboratory work, including the determination of molecular weights by all standard methods, the study of dissociation, etc. *Three hours.* Dr. S. L. BIGELOW.
Course 4a must be preceded or accompanied by Course 4.
7. Laboratory Research in Inorganic Chemistry. Continuation of Courses 3 and 4. *Credit arranged with instructor.* Professor FREER or Mr. HIGLEY.
Although Course 4 is intended primarily for undergraduates who have taken the regular courses in laboratory instruction given in this department, it is also intended for graduate students who have received equivalent instruction.

- 8 Laboratory Research in Organic Chemistry. *Credit arranged with instructors.* Professor FREER and Dr. HULETT.

Courses 8 and 9 are intended for advanced students. They are open only to those who receive special permission. Students electing these courses must be able to read German and French, and must have a knowledge of inorganic, organic, and analytical chemistry.

9. Laboratory Research in Physical Chemistry. *Credit arranged with instructor.* Dr. S. L. BIGELOW or Mr. LICHTY.

See note to Course 8.

10. Journal Club. *One hour.* Professor FREER.

All the instructors and assistants in the department take part in the Journal Club. While it is intended for graduate students, it is also open to undergraduates who receive special permission.

11. German Reading. Sight reading in current chemical literature. *One hour.* Dr. HULETT or Dr. S. L. BIGELOW.

Course 11 is intended for advanced students in chemistry, and is open only to those who convince the instructor of their satisfactory preparation.

12. Physical Chemistry. Laboratory work ending in research. Continuation of Courses 4 and 4a. *Credit arranged with instructor.* Dr. S. L. BIGELOW.

SECOND SEMESTER.

1. Elementary Inorganic Chemistry. Experimental lectures and recitations. *Three hours.* Professor FREER.

5. Inorganic Chemistry, Descriptive and Experimental. *Five hours.* Mr. HIGLEY.

Course 5 must be preceded by Course 1.

13. Spectroscopic Analysis and Use of the Spectroscope. Lectures and laboratory work. *Three hours.* Mr. LICHTY.

14. Laboratory work with the Polariscope, etc. *Two hours.* Mr. LICHTY.

15. Advanced Theoretical and Physical Chemistry. with special reference to electrochemistry and chemical dynamics. Lectures. *Two hours.* Dr. S. L. BIGELOW.

Course 15 must be preceded by Courses 4 and 4a.

ANALYTICAL CHEMISTRY AND ORGANIC CHEMISTRY.

Students who wish to obtain, at graduation, a teacher's diploma in analytical and organic chemistry are required to complete, in addition to the prescribed work in the science and art of teaching, Courses 1 and 5 in general chemistry (*ante*) and Courses 1, 4, 10 in analytical and organic chemistry.

FIRST SEMESTER.

1. Qualitative Analysis. Recitations and laboratory work. Two sections. *Ten hours.* Professor O. C. JOHNSON and Dr. SULLIVAN. Course 1 must be preceded by Course 2 or 5 in general chemistry or an equivalent.
3. First Steps in Qualitative Analysis. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON and Dr. SULLIVAN. Course 3 must be preceded by Course 2 or 5 in general chemistry or an equivalent. It is continued in Course 3a in the second semester, and the two courses, 3 and 3a, together, are equivalent to Course 1.
9. Technical Examination of Gold and Silver Ores, including the Fire Assay. Laboratory work with lectures and reading. *Two hours.* Professor CAMPBELL and Mr. WHITE. Course 9 must be preceded by Course 4. Course 2 in mineralogy is recommended.
10. Organic Chemistry. Lectures and library studies. *Five hours.* Professor PRESCOTT. Course 10 must be preceded by Course 1 or 3.
21. Technical Gas Analysis. Laboratory work. *Two hours.* Professor CAMPBELL and Mr. WHITE. Course 21 is open only to those who receive special permission.
23. Chosen Subjects in Chemistry. Stereochemistry. *Two hours.* Assistant Professor GOMBERG. Course 23 must be preceded by Course 10 and by Course 11 or 12.
29. Chemistry of Beet Sugar. Laboratory work and lectures. *Five hours.* Mr. P. F. TROWBRIDGE.
31. Chemical Technology. A study of chemical manipulations and reactions on a manufacturing scale. The chief subjects treated are: fuels, water, the acid and alkali industry, cements, glass, and the destructive distillation of coal and wood with recovery of by-products. Lectures and assigned reading. *Five hours.* Mr. WHITE. Course 31 must be preceded by Course 1 or 3a.

EITHER FIRST OR SECOND SEMESTER.

4. Quantitative Analysis. Beginning Course. Recitations and laboratory work. *Seven hours.* Professor CAMPBELL. Course 4 is open to those who have taken Course 1 or Course 3a.
5. Advanced Quantitative Analysis. Laboratory work. *Five hours.* Professor CAMPBELL. Course 5 is open to those who have taken Course 4 and who receive special permission.

6. Iron and Steel Analysis. Laboratory work. *Five hours.* Professor CAMPBELL.
Course 6 is open to those who have taken Course 4 and who receive special permission. It cannot be taken at the same time with Course 5.
7. Special Methods in Iron and Steel Analysis. Continuation of Course 6. Laboratory work. *Five hours.* Professor CAMPBELL.
8. Independent Work in Mineral Analysis. Laboratory work. *Five hours.* Professor CAMPBELL.
Course 8 must be preceded by Course 5.
12. Organic Synthesis. Laboratory work. *Three, four, or five hours.* Assistant Professor GOMBERG.
Course 12 must be preceded by Course 4, and preceded or accompanied by Course 10.
13. Organic Synthesis and Ultimate Analysis. Laboratory work and reading, continuation of Course 12. *Three, four, or five hours.* Assistant Professor GOMBERG.
15. Special Subjects in Food Analysis or in Toxicology. Laboratory work with reading. *Three, four, or five hours.* Professor PRESCOTT or Mr. P. F. TROWBRIDGE.
Course 15 is open only to those who have taken Course 14 and who receive special permission.
17. Original Investigation in Organic Chemistry. Laboratory work and library reading. *Credit arranged with instructor.* Professor PRESCOTT or Mr. P. F. TROWBRIDGE.
Courses 17 and 18 must be preceded by Courses 10 and 12, and require special permission.
18. Original Investigation in Organic Chemistry. Laboratory work. *Credit arranged with instructor.* Assistant Professor GOMBERG.
See note to Course 17.
19. Seminary in Recent Research. *Two hours.* Professors PRESCOTT and CAMPBELL, Assistant Professor GOMBERG, and Mr. WHITE.
Courses 19 and 19a must be preceded by Course 10 and by Course 11 or 12, and are open only to graduate students and to those who receive special permission.
- 19a. Continuation of Course 19. *Two hours.*
See note to Course 19.
22. Original Investigation in Qualitative Analysis and Applied Chemistry. Laboratory work. *Credit arranged with instructor.* Professor O. C. JOHNSON or Mr. P. F. TROWBRIDGE.
Course 22 must be preceded by Courses 1 and 4, and is open only to those who receive special permission.

24. Original Investigation in Qualitative Analysis and its Applications. Laboratory work and reading. *Credit arranged with instructor.* Professor CAMPBELL.
Course 24 is open only to those who receive special permission.
26. Bibliography of Analytical Chemistry. Reading and seminary work. *One or two hours.* Professor CAMPBELL.
Course 26 must be preceded or accompanied by one of the following courses: 5, 6, 7, 9, 24.
33. Technological Chemistry. Laboratory work on chosen subjects. *Credit arranged with instructors.* Professor CAMPBELL and Mr. WHITE.
Course 33 must be preceded by Courses 5 and 31, and by Courses 19 and 32 in addition if the subject chosen is in organic technology.

SECOND SEMESTER.

1. Qualitative Analysis. Recitations and laboratory work. *Ten hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.
Course 1 must be preceded by Course 2 or Course 5 in general chemistry or an equivalent.
2. Advanced Qualitative Analysis. Continuation of Course 1, with original work. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON.
Course 2 must be preceded or accompanied by Course 4.
3. First Steps in Qualitative Analysis. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.
Course 3 must be preceded by Course 1 or Course 5 in general chemistry.
- 3a. Qualitative Analysis in continuation of Course 3. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.
See note to Course 3 in first semester.
14. The Chemistry of Alkaloids and the Chemistry of Fats and Oils. Lectures and laboratory work. *Seven hours.* Assistant Professor GOMBERG and Mr. P. F. TROWBRIDGE.
Course 14 must be preceded by Courses 4 and 10.
16. Manufacture and Purification of Chemicals. Laboratory work. *Four hours.* Professor O. C. JOHNSON.
Course 16 is open to those who have completed Courses 1 and 2.
20. The Benzene Derivatives. Lectures. *Four hours.* Assistant Professor GOMBERG.
Course 20 must be preceded by Course 10.
28. Organic Chemistry. Lectures. *Four hours.* Professor PRESCOTT.
Course 28 must be preceded by Course 1 or by Course 3.

30. Chemistry of Beet Sugar. Continuation of Course 29. *Credit arranged with instructor.* Mr. P. F. TROWBRIDGE.
 32. Chemical Technology. The industrial chemistry of organic compounds. Among the subjects treated are: Starch, glucose, and sugar; fermentation and distillation; fats, oils, and soaps; bleaching and dyeing; tanning; paper manufacture. Lectures and assigned reading. *Five hours.* Mr. WHITE.
- Course 32 must be preceded by Courses 10 and 31.

METALLURGY.

FIRST SEMESTER.

1. Fuel and Refractory Material; Iron and Steel. *Three hours.* Professor CAMPBELL.
- Course 1 must be preceded by Course 2 or 5 in general chemistry.

EITHER FIRST OR SECOND SEMESTER.

2. Micro-Metallography. The study of the microscopic structure of metals as related to their physical and chemical properties. Laboratory work with reading. *One hour.* Professor CAMPBELL.
- Course 2 is open only to those who have completed Course 1, and who receive special permission.

PHYSIOLOGICAL CHEMISTRY, BACTERIOLOGY, AND HYGIENE.

The courses in these subjects given by Professor VAUGHAN and NOVY are arranged for the most part to meet the wants of students in the Department of Medicine and Surgery, and of students who propose to study medicine in the future.

FIRST SEMESTER.

1. Hygiene. Lectures. *Three hours.* Professor VAUGHAN.
2. Bacteriology. Lectures. *Three hours.* Professor NOVY.

EITHER FIRST OR SECOND SEMESTER.

3. Bacteriology. Laboratory work, *daily for three months*, beginning the first week in October, January, and April. *Five hours.* Professor NOVY.
- Course 3 is designed especially for students who propose to study medicine and is not open to others except by permission.
- 3a. Bacteriology. Special methods. *Two hours.* Professor NOVY.
- Course 3a must be preceded by Course 3.
- 3b. Bacteriology. Continuation of Course 3a. *Credit arranged with instructor.* Professor NOVY.

4. Methods of Hygiene. Analysis of water, air, soil, milk, butter, etc. Laboratory work. *Seven hours.* Professor NOVY.
Course 4 is open to those who have taken Course 1 or 3 in analytical chemistry.
5. Methods of Hygiene. Continuation of Course 4. *Seven hours.* Professor NOVY.
7. Physiological Chemistry, including Analysis of Urine. Laboratory work, *daily for three months*, beginning the first week in October, January, and April. *Five hours.* Professor NOVY.
Course 7 is open to those who have taken Courses 1 and either 2 or 5 in general chemistry, Course 1 or 3 in analytical chemistry, and Course 10 in organic chemistry.
8. Advanced Physiological Chemistry. Laboratory work and reading. *Seven hours.* Professor NOVY.
9. Original Research on the Causation of Disease. Laboratory work and reading. *Five hours.* Professor VAUGHAN.
Course 9 is designed for advanced students and is open only to those who receive special permission.
10. Original Research on the Causation of Disease. Continuation of Course 9. *Five hours.* Professor VAUGHAN.

SECOND SEMESTER.

- 1a. Hygiene. Lectures. Continuation of Course 1. *Two hours.* Professor VAUGHAN.
6. Physiological Chemistry. Lectures. *Three hours.* Professor VAUGHAN.

HYGIENE AND HOUSEHOLD ECONOMICS.

The courses given by Professor MOSHER are designed primarily for students in the Department of Literature, Science, and the Arts.

FIRST SEMESTER.

1. Personal Hygiene. Structure of the human body; phenomena of nutrition; influences which favor and retard body metabolism; foods and their adulterations, etc. *Three hours.* Professor MOSHER.
3. Household Economics. House construction, furnishing, decorating, cleansing, etc. *One hour.* Professor MOSHER.
Course 3 should be preceded by Courses 1 and 2, though it may be taken independently.

SECOND SEMESTER.

2. (a) Domestic Hygiene: Air, water, soil; house building, drainage, heating, ventilating, lighting, etc. (b) Municipal Hygiene: History of municipal sanitation; water supply of cities; sewage removal; destruction of garbage; street cleaning; sanitary construction of public buildings; school sanitation. *Three hours.* Professor MOSHER.
 4. Household Economics. Foods, their chemical constituents, nutritive values, comparative cost. Dietaries for well and sick. Household emergencies. *One hour.* Professor MOSHER.
- Course 4 should be preceded by Courses 1, 2, and 3, although it may be taken independently.

ASTRONOMY.

Courses 1 and 2 are elementary, and, except for these, a knowledge of calculus is required for all the courses.

FIRST SEMESTER.

1. General Astronomy. *Three hours.* Professor HALL.
5. Spherical Astronomy. *Three hours.* Professor HALL.
In Courses 5 and 8 some standard work on spherical astronomy is rapidly read, and special subjects are given out for discussion.
6. Theory and Computation of Orbits. Gauss's *Theoria Motus*. *Five hours.* Professor HALL.
13. Theory of Least Squares. *Two hours.* Professor HALL.

EITHER FIRST OR SECOND SEMESTER.

4. Practical Astronomy. Use of sextant and transit. *Three hours.* Professor HALL.
9. Extended Practical Course. *Credit arranged with instructor.* Professor HALL.

SECOND SEMESTER.

2. Elementary Practical Course. *Two hours.* Professor HALL.
8. Spherical Astronomy. Continuation of Course 5. *Three hours.* Professor HALL.
See note to Course 5.
11. Mathematical Theory of Planetary Motion. *Three hours.* Professor HALL.

MINERALOGY.

FIRST SEMESTER.

1. Short Course. Lectures and practice. *Two hours.* Professor PETTEE.

For Course 1 an elementary knowledge of chemistry is desirable, though not required. It is intended for students who wish to get a general knowledge of some of the more common minerals. It is not introductory to Course 2. The course is also given in the second semester.

3. Advanced work along such lines as may be agreed upon. *Credit arranged with instructor.* Professor PETTEE.

Course 3 must be preceded by Course 1 or 2. A knowledge of the elements of analytical chemistry is necessary if blow-pipe analysis is included in the course.

SECOND SEMESTER.

1. Short Course. Lectures and practice. *Two hours.* Professor PETTEE.

See note to Course 1 in first semester.

2. Mineralogy and Lithology. Lectures and practice. *Five hours.* Professor PETTEE.

Course 2 is open only to those who are taking, or have taken, a course in analytical chemistry. It does not require any previous knowledge of mineralogy, but is intended for students who wish a broader knowledge of the subject than can be obtained in Course 1.

3. Advanced work along such lines as may be agreed upon. *Credit arranged with instructor.* Professor PETTEE.

See note to Course 3 in first semester.

GEOLOGY.

Courses 1, 2, 7, 10 are intended primarily for undergraduates. Courses 3, 4, 5, 6 are for graduate students and undergraduates who have had sufficient preparation to pursue them with advantage. Special courses will be arranged for graduates by either Professor PETTEE or Professor RUSSELL.

FIRST SEMESTER.

1. Elements of Geology—lithological, structural, dynamical. Lectures and recitations. *Three hours.* Professor RUSSELL.

3. General Palæontology. Invertebrates. Reading, lectures, laboratory work. *Three hours.* Professor RUSSELL.

Course 3 requires a knowledge of the elements of general geology.

5. Physical Geology; volcanoes, igneous intrusions, and metamorphism. Text-book, lectures, conferences, reading. *Two hours.* Professor RUSSELL.

Course 5 must be preceded by Course 1 or 7.

7. Physical Geography. Lectures and conferences on the origin and life-histories of the physical features of the United States. Lantern illustrations. Reviews of works of geography and travel. *Three hours.* Professor RUSSELL.
8. Economic Geology. *Two hours.* Professor PETTEE.
Course 8 must be preceded by Course 1 or 2 in mineralogy.

SECOND SEMESTER.

2. Elements of Geology. Historical Geology. Lectures and recitations. *Three hours.* Professor RUSSELL.
4. Palæontological Investigations. Laboratory work with reading and such instruction as the student may require. This course may be elected as *4a, two hours; 4b, three hours; or 4c, five hours.* Professor RUSSELL.
Course 4 must be preceded by Course 2 or an equivalent.
6. Physical Geology; glaciers and the glacial epoch. Text-book lectures, conferences, reading. *Two hours.* Professor RUSSELL.
Course 6 must be preceded by Course 1 or 7.
10. Physical Geography continued. Meteorology. Text-book, lectures, short thesis. *Three hours.* Professor RUSSELL.
11. Physical Geology; rocks, rock-weathering, and soils. Text-book, lectures, conferences, reading. *Two hours.* Professor RUSSELL.
Course 11 must be preceded by Course 1 or 7.

GENERAL BIOLOGY.

FIRST SEMESTER.

1. Elements of Biology. A study of typical species of plants and animals with reference to structure, function, development, and relationship. Lectures and laboratory work. *Five hours.* Dr. POLLOCK and Dr. JENNINGS.
See note to Course 1 in botany and to Course 1 in zoology.

SECOND SEMESTER

2. Elements of Biology. Continuation of Course 1. Lectures and laboratory work. In botany, the laboratory work comprises a study of alternation of generations and the general biology and physiology of liverworts, mosses, ferns, and gymnosperms. In zoology the laboratory work is on the structure, development, and biology of a typical vertebrate (the frog). *Five or six hours.* Dr. POLLOCK and Dr. HOLMES.
Course 2 must be preceded by Course 1. See also note to Course 1b in zoology and to Course 2 in botany.

BOTANY.

Before entering upon the study of botany, students are required to take a semester in general biology. This should be followed by Courses 2, 4, 5 in botany.

Courses 1, 2, 3, 4, 6 are intended primarily for undergraduates. Courses 5, 7, 8, 9, 10, 11, 12, 13, 14, 20 are for graduates and undergraduates. Courses 15, 16, 17, 18, 19, 22 are primarily for graduates, but undergraduates are admitted to them by special permission. Students preparing to teach botany should complete Courses 1, 2, 4, 5, 8, 13, 14, 20.

FIRST SEMESTER.

1. Elements of Biology [Plant Life]. A study of the properties and activities of protoplasm, developmental history, differentiation, and evolution of structure and function, and relation to the environment. The material for study is selected from simple organisms, chiefly algæ and fungi. Lectures and laboratory work. *Three hours.* Dr. POLLOCK and Dr. SNOW.

Course 1 is equivalent to the botanical part of Course 1 in general biology.

- 1a. Lectures, demonstrations, or conferences on groups, the types of which are studied in Course 1. *One hour.* Dr. POLLOCK.

Course 1a must be preceded or accompanied by Course 1.

- 1b. Ecology. The adaptation of organisms to their environment. Lectures and demonstrations. *One hour.* Professor SPALDING.

Course 1b must be preceded or accompanied by Course 1.

3. Elements of Structural Botany. Special attention is given to the microscopic structure of crude drugs and food substances, and to the detection of adulterations. Laboratory work and demonstrations. *Two hours.* Assistant Professor SCHLOTTERBECK.

5. General Morphology and Physiology. Cell structure, tissue structure, organography; the cell theory, mitosis, heredity; instruction in technique. Lectures and laboratory work. *Five hours.* Professor NEWCOMBE.

Course 5 is open only to students who have pursued the study of botany for at least a year.

7. Experimental Physiology. • Special Problems. *Two or more hours.* Professor NEWCOMBE.

Course 7 is intended to be introductory to research. It is open only to those who receive special permission.

9. Experimental Morphology. Lectures and laboratory work upon the lower forms of algæ, including methods of cultivation, with a view to determining the factors in development and the influ-

ence of environment. This course may be elected as *9a, three hours*; or *9b, five hours*. Dr. SNOW.

11. Morphology and Physiology of Fungi. Lectures, reading, laboratory work, reports. *Five hours*. Professor SPALDING.
- [13. Present Problems of Biology. Lectures on variation, selection, reproduction, heredity, and the inheritance of acquired characters with a discussion of theories and the application of biological principles. *One hour*. Professors SPALDING and NEWCOMBE. Course 13 is omitted in 1899-1900.]
15. Investigations in Physiology. This course may be elected as *15a, three hours*; *15b, five hours*; *15c, eight hours*; or *15d, ten hours*. Professor NEWCOMBE.
17. Investigations in Morphology. This course may be elected as *17a, three hours*; *17b, five hours*; *17c, eight hours*; or *17d, ten hours*. Professor SPALDING.
19. Current Literature of Botany. *One hour*. Professor NEWCOMBE. Course 19 constitutes a journal club in which important papers on botany are reviewed and discussed by the instructors and advanced students. All students are admitted to the meetings, but only advanced students may elect the course.

SECOND SEMESTER.

2. Elements of Biology [Plant Life]. Continuation of Course 1, embracing the alteration of generations and general biology and physiology of liverworts, mosses, ferns, and gymnosperms. Lectures and laboratory work. *Three hours*. Dr. POLLOCK and Dr. SNOW.

Course 2 is equivalent to the botanical part of Course 2 in general biology.

- 2a. Lectures, demonstrations, or conferences on groups, the types of which are studied in Course 2. *One hour*. Dr. POLLOCK. Course 2a must be preceded or accompanied by Course 2.
4. Reproduction and Embryology of Flowering Plants. Lectures and laboratory work. *Three hours*. Dr. POLLOCK.
6. Elements of Structural Botany. Continuation of Course 3. Lectures and laboratory work. *Three hours*. Assistant Professor SCHLOTTERBECK.
8. Experimental Physiology. A laboratory study of the relation of plants to their environment, as manifested by the phenomena of nutrition, growth, and irritability. This course may be elected as *8a, three hours*; or *8b, five hours*. Lectures and laboratory work. Professor NEWCOMBE.

10. Experimental Morphology. Lectures and laboratory work upon the lower forms of algæ, including methods of cultivation, with a view to determining the factors in development and the influence of environment. This course may be elected as 10a, *three hours*; or 10b, *five hours*. Dr. SNOW.
12. Morphology and Physiology of Fungi. Laboratory work, reading, reports. *Five hours*. Professor SPALDING.
14. The Natural Families of Plants. A review of the leading groups of plants with primary reference to relationship, distribution, and biological characters. Lectures, reading, demonstrations. *Three hours*. Professor SPALDING.
16. Investigations in Physiology. This course may be elected as 16a, *three hours*; 16b, *five hours*; 16c, *eight hours*; or 16d, *ten hours*. Professor NEWCOMBE.
18. Investigations in Morphology. This course may be elected as 18a, *three hours*; 18b, *five hours*; 18c, *eight hours*; or 18d, *ten hours*. Professor SPALDING.
20. Teacher's Conference and Field Club. In the first half of the semester the time is occupied with conferences and reports on lists of books, apparatus, and material for high school laboratories, and practical methods; in the second half, excursions are made under the guidance of different members of the corps of instructors for the purpose of learning methods of collecting and preserving material and conducting field observations. *One hour*. Professor SPALDING.
22. Current Literature of Botany. Continuation of Course 19. *One hour*. Professor NEWCOMBE.

ZOOLOGY.

Before entering upon the study of zoology, students are required to take a semester, and are advised to take a year, in general biology. The work done in Courses 1 and 1b is identical with the zoological portion of the courses in general biology. Those courses together with Course 3 are planned to meet the needs of those who have but a limited time to give to zoology, as part of a general education. While all the zoological courses are non-technical, and may properly form a part of a non-professional education, the more advanced courses may at the same time be considered as preparatory to medicine and to teaching. Courses 5, 8, 8a, 9, are of value to students preparing to study medicine; while both these and Courses 2, 2a are of value to teachers. Courses 10, 12, 13, 14, 15, 16, 21, 22, are advanced graduate courses and are open to undergraduates only by special permission.

Field Club.—A zoological field club, organized by students, under-

takes to study the local fauna, to identify and preserve specimens, make distribution maps, and collect biological data. The coöperation of students and others interested is invited.

FIRST SEMESTER.

1. Elements of Animal Biology. A study of protoplasm, of the cell and its activities, and of the structure, development, and biology of invertebrate animal types selected to illustrate general principles. Lectures and laboratory work. *Three hours.* Dr. JENNINGS.

Course 1 is equivalent to the zoological part of Course 1 in general biology.

2. Invertebrate Zoology. The structure, classification, habits, and distribution of invertebrate animals with special reference to the influence of environment, to adaptation, and to the general principles of organic evolution. Lectures with demonstrations and conferences. *Five hours.* Dr. HOLMES.

- 2a. Comparative Anatomy of Invertebrates. Laboratory work on invertebrate types, not included in the course in general biology. *Three hours.* Dr. HOLMES.

Course 2a must be preceded or accompanied by Course 2.

9. Comparative Embryology of Vertebrates. Lectures and laboratory work on amblystoma and the chick, with much supplementary material. *Six hours.* Professor REIGHARD and Dr. GENTHE.

Course 9 must be preceded by Courses 1, 1b.

12. Current Literature of Zoology. *One hour.* Professor REIGHARD
In Course 12, the instructors and advanced students form a journal club which holds weekly meetings. Reports are made on important current papers and are followed by informal discussion. Although the meetings are open to all, the membership is restricted.

14. Research. Work may be arranged upon the gross anatomy, the microscopic anatomy, or the development of vertebrates or invertebrates, or upon experimental zoology. This course may be elected as 14a, *two hours*; 14b, *three hours*; 14c, *five hours*; or 14d, *ten hours*. Application should be made to Professor REIGHARD, but the work may be carried on under the direction of other members of the zoological staff.

16. Museum Work. Students desiring to carry on systematic work on special groups represented in the University Museum, are given every opportunity to do so, but must first satisfy the instructor in charge of their fitness to pursue independent work. *Credit arranged with instructor.* Application should be made to Professor REIGHARD.

22. Experimental Morphology. Laboratory work in experimental embryology and the influence of physical agents on animals. Continuation of Course 10. This course may be elected as 22a, *two hours*; 22b, *three hours*; or 22c, *five hours*. Dr. JENNINGS.
25. Entomology. Introductory lectures on the structure, development, physiology, distribution, palæontology, general biology, and classification of insects. Laboratory work. *Three hours*. Dr. GENTHE.

SECOND SEMESTER.

- 1b. Elements of Animal Biology. The structure, development, and biology of a typical vertebrate (the frog). Lectures and laboratory work. *Three hours*. Dr. HOLMES.

Course 1b is equivalent to the zoological part of Course 2 in general biology. It is a prerequisite for Courses 8 and 9.

3. The Evidences and Factors of Organic Evolution. Illustrated lectures serving as an introduction to zoology. *One hour*. Professor REIGHARD.
5. Mammalian Anatomy. Dissection of the cat. Laboratory work, lectures, quizzes. In the laboratory the class uses typewritten copies of a descriptive anatomy of the cat prepared by Professor REIGHARD. *Six hours*. Dr. JENNINGS.

Course 5 deals with the anatomy of a mammal (the cat) whose structure closely resembles that of man. It is meant for those who for any reason desire some knowledge of human anatomy, but who find it impossible to pursue human dissection. While it may properly form a part of a general culture course, it is of especial value to those intending to teach physiology in the secondary schools or to carry on university work in human anatomy or physiology.

8. Vertebrate Zoology and Comparative Anatomy. Lectures and laboratory work on selected forms, the lancelet, the lamprey, the skate, the perch, the turtle, the pigeon, and the rabbit, together with a study of preparations of other forms. *Six hours*. Professor REIGHARD and Dr. GENTHE.

In Course 8 the list of forms studied varies from year to year.

- 8a. Vertebrate Morphology. Advanced work in comparative anatomy or embryology. *Credit arranged with instructor*. Professor REIGHARD.
10. Experimental Morphology. Lectures reviewing recent work in experimental embryology and the influence of physical agents on animals. This course is offered in two parts, to be given in alternate years, and designated as 10a and 10b.

[10a. The external factors of development; the action of chemical substances, light, heat, gravity, etc., on protoplasm and development. *One hour.*

Course 10a is omitted in 1899-1900.]

10b. The internal factors of development, the sex cells, cell lineage, isolation of cleavage products, etc. *One hour.*
Dr. JENNINGS.

In connection with the lectures students may elect, by special permission, laboratory work as Course 10c, *two hours*; 10d, *three hours*; or 10e, *five hours*.

13. Current Literature of Zoology. Continuation of Course 12. *One hour.* Professor REIGHARD.

See note to Course 12 in first semester.

15. Research. Continuation of Course 14. This course may be elected as 15a, *two hours*; 15b, *three hours*; 15c, *five hours*; or 15d, *ten hours*. Application should be made to Professor REIGHARD.

21. Museum Work. Continuation of Course 16. *Credit arranged with instructor.* Application should be made to Professor REIGHARD.

23. Cytology. Lectures on the structure and activities of the cell and its relation to development and inheritance; with laboratory work. *Three hours.* Dr. HOLMES.

24. The Animal Parasites of Man and the Lower Animals, with especial reference to the general principles and their relations to man. Lectures and laboratory work. *Three hours.* Dr. GENTHE.

ANATOMY.

The courses in anatomy are open only to students who receive special permission.

FIRST SEMESTER.

1. Osteology. Lectures and demonstrations. *Two hours.* Dr. YUTZY.
2. Descriptive Anatomy. Lectures. *Two hours.* Professor McMURRICH.

4. Anatomy of Nervous System. Lectures. *Two hours.* Professor McMURRICH.

It is desirable that Course 4 should be preceded by Courses 2 and 3.

7. Vertebrate Histology. Lectures, reading, and laboratory work, with instruction in methods. *Five hours.* Professor HUBER.

Course 7 must be preceded by Course 1 in general biology.

EITHER FIRST OR SECOND SEMESTER.

5. Practical Anatomy. Laboratory work. *Four hours.* Professor McMURRICH and Dr. YUTZY.

See note to Course 6.

6. Practical Anatomy. Laboratory work. *Four hours.* Professor McMURRICH and Dr. YUTZY.

Courses 5 and 6 are both required in order to complete the laboratory work in human anatomy. Classes are formed three times a year and each course requires the attendance of the student every day for twelve weeks.

9. Methods of Vertebrate Histology. Laboratory work and reading *Two hours.* Professor HUBER.

Course 9 must be preceded by Course 7 or 8.

10. Research in Vertebrate Histology. This course may be elected as *10a, three hours;* or *10b, five hours.* Professor HUBER.

11. Microscopic Anatomy of the Central and Peripheral Nervous System and Special Sense Organs. Laboratory work and reading. This course may be elected as *11a, three hours;* or *11b, five hours.* Professors McMURRICH and HUBER.

Course 11 should be preceded by Courses 4 and 9.

SECOND SEMESTER.

3. Descriptive Anatomy. Continuation of Course 2. Lectures. *Two hours.* Professor McMURRICH.

8. Vertebrate Histology. Laboratory work and lectures. *Five hours.* Professor HUBER.

Course 8 covers the same ground as Course 7 and must be preceded by Course 1 in general biology.

PHYSIOLOGY.

The courses in physiology are arranged for those who intend to become physicians or dentists, those who propose to teach the subject, and those who contemplate making biology, physiology, or psychology a specialty.

Instruction is given by lectures, recitations, informal discussions, and laboratory work. In the laboratory the student learns to use the apparatus and methods employed in ordinary physiological experiments. Advanced students are given an opportunity to begin research work.

Work in physiology should be preceded by the following courses or their equivalent, viz.: Course 5 in zoology (or a course in descriptive and practical human anatomy, and lectures and laboratory work in vertebrate histology, in the Department of Medicine and Surgery), Courses 1, 2 in physics, Courses 1, 2, 5 in general chemistry, and Course 10 in organic chemistry.

FIRST SEMESTER.

1. Lectures and Recitations. *Five hours.* Professor LOMBARD.

SECOND SEMESTER.

2. Continuation of Course 1. *Five hours.* Professor LOMBARD.
3. Laboratory Work. *Two hours.* Professor LOMBARD.
Course 3 is open only to students who have taken or are taking Course 2.
4. Physiological Experimentation. Teacher's Course. *One hour.* Professor LOMBARD.
Course 4 is open only to those who have taken Course 3.
5. Physiological Experimentation. Research work. *Two hours.* Professor LOMBARD.

DRAWING.

FIRST SEMESTER.

1. Geometrical Drawing. Four sections. *Two hours.* Mr. GOULDING.
4. Free-Hand Drawing; Pencil Drawing; Pen-and-Ink Drawing; Sketching. Two sections. *Three hours.* Professor DENISON, Mr. WRENTMORE, and Miss HUNT.
10. Continuation of Course 8. *Two hours.* Professor DENISON and Miss HUNT.
Course 10 must be preceded by Courses 4, 7, 8.
13. Water-color Drawing. *Three hours.* Professor DENISON and Miss HUNT.
Course 13 must be preceded by Course 8. It can be taken only by special permission.

SECOND SEMESTER.

5. Descriptive Geometry. Recitations and drawing. Five sections. *Four hours.* Mr. WRENTMORE and Mr. GOULDING.
Course 5 must be preceded by Course 1.
6. Shades, Shadows, and Perspective. *Three hours.* Professor DENISON.
Course 6 must be preceded by Course 5.
7. Free-Hand Drawing (advanced). *Three hours.* Professor DENISON and Miss HUNT.
8. Architectural and Water-Color Drawing. Two sections. *Two hours.* Professor DENISON, Mr. GOULDING, and Miss HUNT.
Course 8 must be preceded by Course 1 or 4.
14. Stereotomy. *Two hours.* Professor DENISON.
Course 14 must be preceded by Course 5.
16. Free-Hand Lettering. *Two hours.* Mr. WRENTMORE.
Course 16 must be preceded by Course 1.
17. Spherical Projections. *One hour.* Professor DENISON.
Course 17 must be preceded by Course 5.

SURVEYING, CIVIL ENGINEERING, MECHANICAL ENGINEERING, ELECTRICAL ENGINEERING, AND MARINE ENGINEERING.

The courses in these subjects are arranged primarily for students in the Department of Engineering, and are described in the chapter on that department (pages 155 to 160), but they are open on certain conditions to students of the Department of Literature, Science, and the Arts.

ATHLETICS.

Classes are formed in both semesters for gymnasium work under the charge of the Director of the Gymnasium; but no credit toward graduation is given for this work.

COURSES IN PROFESSIONAL STUDY.

In some of the subjects taught in this department of the University, the instruction is substantially identical with that given in the professional schools. A student in this department, therefore by making a proper choice of electives, may qualify himself for advanced standing in professional study; and, under certain conditions explained below, he may elect, as a part of the requirements for a bachelor's degree, some of the courses given in another department. By this arrangement, and with the cooperation of the faculties of the several departments, opportunity is afforded to reduce by a year (or, possibly, in medicine by two years) the time required for earning both a collegiate and a professional degree.

COMBINED COURSE IN COLLEGIATE AND MEDICAL STUDIES.

The subjects included in the first two years of the curriculum of the Department of Medicine and Surgery are (with the exception of electrotherapeutics and the courses in regional and surgical anatomy) all provided for in the Courses of Instruction enumerated on the preceding pages (87 to 106). The character and the extent of the instruction in these subjects are not, however, in all cases identical in the two departments. The following scheme is, therefore, given to show which of the courses offered in the Department of Literature, Science, and the Arts, are accepted in the Department of Medicine and Surgery as covering the requirements in the corresponding courses given in that department. The medical courses are not, however, in all cases, accepted as covering the requirements in the Literary Department.

FIRST YEAR.*Medical Courses.*

Anatomy and Osteology,
General Chemistry,
Organic Chemistry,
Laboratory Chemistry,
Physics,
Bacteriology,
Histology,

Literary Courses.

Anatomy: Courses 1, 2, 3, 5.
General Chemistry: Courses 1, 2.
Organic Chemistry: Course 28.
Analytical Chemistry: Course 3.
Physics: Course 1.
Bacteriology: Courses 2, 3.
Anatomy: Course 7 or 8.

SECOND YEAR.*Medical Courses.*

Anatomy,
Physiology,
Hygiene,
Embryology,
Physiological Chemistry,

Literary Courses.

Anatomy: Courses 4, 6.
Physiology: Courses 1, 2.
Hygiene: Courses 1, 1a.*
Zoology: Course 9.
Physiological Chemistry: Courses 6, 7.

A student who intends to pursue the study of medicine after taking his bachelor's degree may shorten his total period of residence at the University by electing, as an undergraduate, the literary courses above named as accepted in the Department of Medicine and Surgery; the precise amount of time gained depending upon the amount of the required medical work he completes while enrolled as a literary student. If he wishes to arrange his work in such a way as, after receiving his bachelor's degree, to secure admission to the third year of the medical course, and so earn the two degrees in six years of study, he must complete all the above-named accepted courses before taking his first degree; and he must also make his intention known to the President of the University as early as the beginning of his third year of undergraduate work, and obtain special permission to be registered also as a student in medicine.

While the opportunity to combine collegiate and medical work is open to all students in this department of the University, it is probable that a course of study which leads to the degree of Bachelor of Science (see page 112) will be the most suitable and the most economical of time for those who intend also to take the degree of Doctor of Medicine.

A student who aims to earn the two degrees, Bachelor of Science and Doctor of Medicine, in six years will find it necessary to arrange his studies with this end in view from the beginning of his first year of residence at the University. The amount of work prescribed for the two degrees is sufficient to fill nearly all the student's time, leaving only a

*The courses conducted by Professor VAUGHAN are here indicated.

small number of hours free for electives. To enable such a student to plan his work intelligently and systematically, a scheme of study, covering four years, is here given. The scheme does not represent a complete prescribed course, nor the only course possible, but it is intended to show an order in which the prescribed studies may be taken to advantage. Some elective work in addition will be needed to satisfy the requirements for the bachelor's degree.

Students who wish to take advantage of the opportunity here offered for combining collegiate and medical work should consult frequently after the first year, with a committee appointed to consider questions arising in this connection. This committee at present consists of Professors NOVY and HUBER.

FIRST YEAR.

First Semester: French, four hours; German, four hours; English, Course 1, two hours; Mathematics, three hours; General Chemistry, Course 1, three hours.

Second Semester: French or German, four hours; Mathematics, four hours; Physics, Course 1, five hours; General Chemistry, Course 2, three hours.

SECOND YEAR.

First Semester: English, Course 1*a*, two hours; Analytical Chemistry, Course 3, five hours; General Biology, Course 1, five hours; Bacteriology, Course 2, three hours.

Second Semester: Organic Chemistry, Course 2*b*, four hours; Zoology, Course 1*b*, three hours; Bacteriology, Course 3, five hours.

THIRD YEAR.

Italics indicate the title of the corresponding medical courses.

First Semester: Hygiene, Course 1, three hours; Anatomy, Course 1, two hours (*Osteology*); Zoology, Course 9, six hours (or the medical course in *Embryology*, for which, however, no credit is given toward the degree of Bachelor of Science); Anatomy, Course 2, two hours (*General Anatomy*).

Second Semester: Hygiene, Course 1*a*, two hours; Anatomy, Course 8, five hours (*Histology*); Anatomy, Course 3, two hours (*General Anatomy*).

FOURTH YEAR.

Italics indicate the title of the corresponding medical courses.

First Semester: Physiological Chemistry, Course 7, five hours; Anatomy, Course 4, two hours (*Anatomy of Nervous System*); Anatomy, Course 5, four hours (*Practical Anatomy*); Physiology, Course 1, five hours.

Second Semester: Physiological Chemistry, Course 6, three hours;

Anatomy, Course 6, four hours (*Practical Anatomy*); Physiology, Course 2, five hours; the medical courses in *Regional and Surgical Anatomy* and in *Electrotherapeutics*, for which, however, no credit is given toward the degree of Bachelor of Science.

COMBINED COURSE IN COLLEGIATE AND LAW STUDIES.

In order that the collegiate work and the work in law may be successfully combined, it is necessary that a student enrolled in the Department of Literature, Science, and the Arts, should complete, before the close of his fourth year of residence, Course 1 in International Law (page 85); Course 19 in History (Constitutional Law and Political Institutions of the United States, page 75); Course 16 in Philosophy (Political Philosophy, page 80); and at least *twenty hours* of work selected from the following courses, all of which, however, are strongly recommended as a desirable preparation for the study of law:—

In History: Courses 3, 4, 11, 14, 15, 21, 22, embracing the constitutional history of England, the political and constitutional history of the United States, English constitutional law, and comparative constitutional law (see pages 74-76).

In Political Economy and Sociology: Courses 3, 4, 5, 9, 19, 22, embracing the history of the development of industrial society, problems in political economy, principles of the science of finance, money and banking, and principles and problems of sociology (see pages 83, 84).

In Philosophy: Courses 1, 2a, 2b, embracing the elements of logic and psychology (see page 79).

From the courses above enumerated the Faculty of the Department of Law will accept an amount represented by *ten hours* of credit as a substitute for the law courses in Elementary Law, Elementary Real Property, Constitutional Law, Private International Law, and the Science of Jurisprudence.

It will furthermore be necessary for the student in the Department of Literature, Science, and the Arts, to complete before the close of his fourth year of residence, the courses offered in the Department of Law in the subjects of Contracts, Torts, Domestic Relations including Husband and Wife, and Personal Property. On the completion of these courses credit toward graduation to the extent of *fifteen hours* will be given in the Department of Literature, Science, and the Arts.

To be entitled to the privilege of entering upon the combined course a student must have at least *ninety hours* to his credit as a candidate for a collegiate degree.

The work of students who receive permission to enter upon this combined course is under the supervision of a special joint committee, con-

sisting for the current year of Professors McLAUGHLIN, TAYLOR, LLOYD, HUTCHINS, and MECHEM. This committee also has supervision of the work of students enrolled in the Department of Law who receive permission to take extra work of a collegiate character, and of literary students who receive permission to take some part of the course in law without entering upon the combined course. All students who wish to carry on work in the two departments, whether on the combined course or not, must secure permission to do so from the committee before making their elections.

REQUIREMENTS FOR GRADUATION,

[For the Higher Degrees, see the chapter on the Graduate School, page 124.]

Residence at the University for at least one academic year is required of all candidates for a degree.

Different lines of study lead to the degrees of Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, and Bachelor of Letters. The several degrees may be earned either on the credit system, or on the university system. A description of the latter is given on page 114. The requirements for graduation on the credit system are as follows:

GRADUATION ON THE CREDIT SYSTEM.

On the credit system, the Faculty recommends for graduation students who have secured a stated number of *Hours of Credit*, according to the requirements specified below,—a part of the subjects being prescribed and a part being chosen by the student. An *Hour of Credit* is ordinarily given for the satisfactory completion of work equivalent to one exercise a week during one semester, whether in recitations, laboratory work, or lectures. Lectures and recitations are usually one hour in length; but in courses of study that involve laboratory work, drawing, or other practical exercises, a longer attendance than one hour at an exercise is required in order to secure an hour of credit.

The courses enumerated are more fully described in the section on Courses of Instruction, pages 55 to 107.

THE DEGREE OF BACHELOR OF ARTS.

To obtain the recommendation of the Faculty for the degree of Bachelor of Arts, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows:

In Greek: Courses 1, 2, 3, 4, and either 5a or 5b.

In Latin: Courses 1, 2, 3, 4.

In French: Courses 1, 2.

In English: Courses 1, 2.

In Philosophy: Course 1.

In Mathematics: Courses 1a, 2a, 3a, 4a.

But after a student has completed Courses 1, 2, 3 in Greek, 1, 2, in Latin, and 1a, 2a in mathematics, he may, at his option, discontinue the study of any one of three subjects. From the other courses offered he must choose and complete enough to secure in all *one hundred and twenty Hours of Credit*.

THE DEGREE OF BACHELOR OF PHILOSOPHY.

To obtain the recommendation of the Faculty for the degree of Bachelor of Philosophy, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows:

In Latin: Courses 1, 2, 3, 4.

In French: (a) for those who entered without French, Courses 1, 2, 3, 4; or (b) for those who passed the two-year entrance requirement in French, Courses 3, 4.

In German: (a) for those who entered without German, Courses 1, 2, 3, 4;

or (b) for those who passed the two-year entrance requirement in German, Courses 3, 4.

In English: Courses 1, 2.

In Philosophy: Course 1.

In Mathematics: Courses 1a, 2a, 3a, 4a.

But after a student has completed Courses 1, 2 in Latin, 1a, 2a in mathematics, and 1, 2 in German (if he entered without German) or 1, 2 in French (if he entered without French) he may, at his option, discontinue the study of Latin, or mathematics, or the modern language (French or German) which he began in the University. From the other courses offered he must choose and complete enough to secure in all *one hundred and twenty Hours of Credit*.

THE DEGREE OF BACHELOR OF SCIENCE.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows:

In French: (a) for those who entered without French, Courses 1, 2;
or (b) for those who passed the two-year entrance requirement in French, Course 3.

In German: (a) for those who entered without German, Courses 1, 2;
or (b) for those who passed the two-year entrance requirement in German, Course 3.

In English: Courses 1, 1a.

In Mathematics: Courses 1a, 2a.

In Physics: Course 1.

In General Chemistry: (a) for those who entered without Chemistry, Course 1 and Course 2 or 5;

or (b) for those who entered with Chemistry, Course 2 or 5.

In General Biology: Course 1.

In addition to the foregoing the student must secure credit to the amount of *thirty hours* in some subject or subjects designated as his Chief Study. The Chief Study must be chosen from one of the following departments of instruction (or from two of these departments, if permission is first obtained from the heads of the two departments to divide the work between them): Astronomy, Botany, Chemistry, Geology, Hygiene, Mathematics, Mineralogy, Physics, Physiology, Zoology. The student is advised to consult early in his course with the head of the department in which he proposes to take his Chief Study.

From the other courses offered the student must choose and complete enough to secure in all *one hundred and twenty Hours of Credit*.

THE DEGREE OF BACHELOR OF LETTERS.

To obtain the recommendation of the Faculty for the degree of Bachelor of Letters, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows:

In French: (a) for those who entered without French, Courses 1, 2, 3, 4;
or (b) for those who passed the two-year entrance requirement in French, Courses 3, 4.

In German: (a) for those who entered without German, Courses 1, 2, 3, 4;

or (b) for those who passed the two-year entrance requirement in German, Courses 3, 4.

In English: Courses 1, 2, 3, 4.

In History: Courses 1, 2.

In Philosophy: Course 1.

In Mathematics: Course 1a.

But after a student has completed Courses 1, 2 in French (if he entered without French) and Courses 1, 2, in German (if he entered without German), he may, at his option, discontinue either of these two

subjects. From the other courses offered he must choose and complete enough to secure in all *one hundred and twenty Hours of Credit*.

GRADUATION ON THE UNIVERSITY SYSTEM.

1. The privileges of the university system are open to undergraduates who have completed their second year of residence, and have also secured at least sixty Hours of Credit, including all the prescribed work that can be taken in the first two years for some one of the bachelor's degrees.

2. Before beginning his work each undergraduate student must make application to the Registrar, and receive from him a certificate that he is entitled to enter upon the work. This application must be made before the student enters on the work of his third year of collegiate residence. In cases of exceptional character, however, the Faculty may grant permission to begin work on this system at a later date.

3. Students who are working on the university system are not held to the completion of a fixed number of hours of work, but are required to pursue three distinct lines of study, one *major study* and two *minor studies*, and, at the close of the work, to pass a special examination on those studies. The committee in charge of any undergraduate's work may, however, at their option, accept, in lieu of the final examination in a minor study, approved work, in the line of that study or germane to it, done on the credit system, equivalent to one-fourth of the amount of work remaining to be completed by the student before graduation, if he had continued on the credit system. Members of the graduating class who have completed all the prescribed portions of the requirements for graduation, and who have not more than thirty hours of work to complete in their last year of residence, are allowed to take, in place of one-half the amount remaining to be completed, a major study on the university system; or, in place of all the amount remaining, a line of special work approved and directed by the Administrative Council of the Graduate School.

4. The work of students carrying on their studies on the university system is supervised by committees of the Faculty. The members of the committee in each case consist of the professors in charge of the student's work, the professor in charge of the major study being chairman. On making his application to the Registrar, each student is directed to the proper committee.

5. Students on the university system are subject to all the rules of the Department relating to attendance and to examinations. No student can be excused from any work that he has once entered upon, nor from any examination, without the consent of the instructor in charge of the work. Examinations passed at the close of each semester on ordinary class work do not count as an equivalent or in abatement of the final examination to be passed for a degree, except as provided above in paragraph 3.

6. Undergraduates who have been enrolled as candidates on the university system for at least three semesters, may be admitted to a special examination for a bachelor's degree at a date not earlier than the end of three and a half years of residence at the University. Before being recommended for any bachelor's degree, however, they must have completed all the courses prescribed for that degree. The examination is conducted by the regular committee and such other persons as they may ask to assist them.

TEACHER'S DIPLOMA AND TEACHER'S CERTIFICATE.

The aims of the University in providing instruction in the Science and the Art of Teaching, are as follows:

1. To fit the University students for the higher positions in the public school service.
2. To promote the study of educational science.
3. To teach the history of education, and of educational systems and doctrines.
4. To secure to teaching the rights, prerogatives, and advantages of a profession.

5. To give a more perfect unity to our State educational system by bringing the secondary schools into closer relations with the University.

TEACHER'S DIPLOMA.

The Teacher's Diploma is given to a student in connection with his bachelor's degree, provided he has complied with the following conditions:

(1) He must have taken Courses 1 and 2 and some three-hour course in the science and art of teaching (see pages 80 to 82).

(2) He must have taken such teacher's course or courses as may be prescribed in some one of the other departments of instruction that offer such courses.

(3) He must have shown such ability in his work as will, in the judgment of the professors interested, entitle him to receive such diploma, it being distinctly understood that work good enough to count towards fulfilling the requirements for a degree is not of necessity good enough to count for this purpose.

The Diploma is also given to a graduate student at the time of receiving a master's or a doctor's degree, provided he has pursued teaching as a major or minor study and has also taken a Teacher's Course in some other department.

TEACHER'S CERTIFICATE.

By authority of an act of the State Legislature, passed in 1891, the Faculty of this Department gives a Teacher's Certificate to any person who takes a bachelor's, master's, or doctor's degree and also receives a Teacher's Diploma as provided above. By the terms of the act, the certificate given by the Faculty "shall serve as a legal certificate of qualification to teach in any of the schools of this State, when a copy thereof shall have been filed or recorded in the office of the legal examining officer or officers of the county, township, city, or district."

TEACHER'S APPOINTMENT COMMITTEE.

An appointment committee of the Faculty of the Department of Literature, Science, and the Arts, composed of representatives of the various departments of instruction, has been constituted for the purpose of securing positions as teachers in schools of different kinds for men and women who are studying, or have studied, under the Faculty, whether they have taken a degree or not. This service is performed gratuitously, in the interest of students of the University, past or present, and of superintendents of schools and boards of education wishing to employ teachers. The administrative work is done by a sub-committee, called the Executive Committee. Persons desiring to reach this committee should address their communications to the "Secretary of the Appointment Committee, University of Michigan."

FELLOWSHIPS AND SCHOLARSHIPS.**ELISHA JONES CLASSICAL FELLOWSHIP.**

In 1889 the Elisha Jones Classical Fellowship was established by Mrs. Catherine E. Jones, in memory of her husband, Professor Elisha Jones, a graduate of this University in the class of 1859, and for many years a member of the Literary Faculty. Its purpose is "to encourage patient, honest, accurate study of the languages, literature, and archæology of ancient Greece and Rome."

A candidate for this Fellowship must have spent at least three entire semesters as a student in this Department of the University and must be a Bachelor of Arts of this University, of not more than two years' standing. Appointments to the Fellowship are made by an Examining Board, consisting of President ANGELL and Professors D'OOGHE, KELSEY, HUDSON, and PATTENGILL. The period of incumbency is limited to two academic years, and must be spent at this University "unless at any time the examining board shall see fit to allow the second year to be spent" at some other place favorable to classical study.

The present holder of the Fellowship is Walter David Hadzsits, A.M.

FELLOWSHIP IN CHEMISTRY.

The sum of five hundred dollars has been given by Messrs. Parke, Davis, and Company, of Detroit, for the continuation in the years 1899-1900 of the Fellowship in Chemistry established by them in 1895. Professors VAUGHAN, PRESCOTT, and FREER have been designated to act as a committee to select the incumbent and to arrange the work in accordance with the wishes of the donors. The holder of the Fellowship for the current year is Ralph Hugh Page, B.S.

DETROIT HIGH SCHOOL SCHOLARSHIPS.

The alumni of the Detroit High School have established several scholarships open to graduates of that school. The first steps toward raising a fund for this purpose were taken in 1891; and a corporation has since been formed under the title of the Detroit High School Scholarship Fund Association.* From four to six students at a time usually enjoy the benefit of the fund. Several of the beneficiaries have received

*The State Legislature in 1893 passed an act providing "that five or more persons of full age, residing in the State of Michigan, may associate and incorporate themselves together for the purpose of establishing scholarships in the University of Michigan, for the benefit of graduates of the high schools of this state." A corporation organized in accordance with the provisions of this act "shall be under the general management of not less than five nor more than fifteen trustees," and "shall, in law and equity, be capable of taking and receiving real and personal estate . . . not exceeding one hundred thousand dollars in the aggregate, for the purpose of its incorporation."

degrees at the University. One of the scholarships is known as the Mary C Leete Memorial Scholarship, in memory of a teacher who died in 1894.

SAGINAW HIGH SCHOOL SCHOLARSHIPS.

Four scholarships, with an annual income of two hundred and fifty dollars each, established by Mr. Arthur Hill, of Saginaw, W. S., and known as the John Moore, the Wells-Stone, the Alonzo R. Bingham, and the Otto Roeser scholarships, are open to graduates of the Saginaw High School.

The Saginaw, E. S., High School offers two scholarships of fifty dollars each to deserving graduates of that school. One of these is known as the Heavenrich, Brothers & Co's scholarship, and is provided by the mercantile firm of that name. The other, designated as the High School Scholarship, is cared for largely by the High School Lyceum.

SCHOLARSHIP OF THE CLASS OF 1894.

The Class of 1894 has established a scholarship fund, but the proceeds of the fund are not yet available.

SETH HARRISON SCHOLARSHIP FUND.

The Seth Harrison Scholarship Fund was established, in memory of her father, by Mrs. Clara Harrison Stranahan, of Brooklyn, N. Y. The principal of the fund is twenty-five thousand dollars. The income is to be used, on conditions specified in the covenant between Mrs. Stranahan and the Board of Regents, for the benefit of descendants of Seth Harrison who may be pursuing studies in the Department of Literature, Science, and the Arts of the University of Michigan, whenever applicants properly qualified present themselves. Provision is made, however, for applying the income of the fund to scholarships for other persons, "if at any time there shall be a period of seven years during which there are no qualified applicants," descendants of Seth Harrison.

PHILLIPS SCHOLARSHIPS.

The late Henry Phillips, Jr., of Philadelphia, Pa., made provision in his will for the establishment and maintenance of six scholarships, to be known as the Phillips Scholarships, in the Department of Literature, Science, and the Arts of the University of Michigan. By the terms of the will these scholarships are to be open only to candidates for the degree of Bachelor of Arts, who excel in the Greek and Latin studies required for admission to the University; and they are to be awarded by a committee consisting of the President of the University, the Dean of the Department, the senior professor of Greek, and the senior professor of Latin.

GRAND RAPIDS HIGH SCHOOL SCHOLARSHIPS.

The High School Scholarship Association of Grand Rapids is a body incorporated under the State law, for the purpose of assisting graduates of the Grand Rapids High School to secure a college education in the Department of Literature, Science, and the Arts of the University of Michigan.

SCHOLARSHIP OF THE CLASS OF 1897.

The class of 1897 has established a fund, a portion of which is available as a loan fund.

SCHOLARSHIP OF THE CLASS OF 1898.

The class of 1898 has established a scholarship fund, but the proceeds of the fund are not yet available.

PERRY SCHOLARSHIP FUND.

The Perry Scholarship Fund was established in 1898 by the Alumni Association of the Ann Arbor High School, in memory of Walter Scott Perry, graduate of the University in the class of 1861, and for twenty-seven years Superintendent of the Ann Arbor Schools.

The purpose of the fund is to assist graduates of the school in procuring an education in the Department of Literature, Science, and the Arts of the University of Michigan. It is administered as a Loan Fund, repayments to be made by beneficiaries under regulations prescribed by the Board of Directors of the High School Alumni Association.

RULES AND REGULATIONS OF THE DEPARTMENT.

The following rules and regulations relate to admission conditions, election of studies, examinations, work in other departments, attendance, and discipline.

ADMISSION CONDITIONS.

All students are regarded as strictly on probation, until they have removed all conditions incurred in the examinations for admission to the Department. All such conditions must be removed during the year following the date of the examination. Students who have any admission conditions outstanding at the beginning of their second year of residence are not allowed to join their classes until such conditions are removed.

ELECTION OF STUDIES.

I. The maximum number of hours a week a student may elect with out special permission of the Faculty is *sixteen*.

In cases of exceptional proficiency additional hours are granted by the Faculty on special request; but in all cases requests for permission to take an additional number of hours must be made in writing on a blank form provided by the Registrar, and must be deposited in the Registrar's box on or before the *first Saturday* of the semester during which the additional work is desired.

N. B.—For students who are allowed to make up preparatory studies in the Ann Arbor High School a corresponding reduction is made from the maximum number of hours allowed them in the University.

II. The minimum number of hours a student may elect without special permission of the Faculty is *twelve*.

All requests for permission to take less than twelve hours must be made in writing, stating the proposed election and the reasons therefor, and must be presented to the Chairman of the Administrative Board on or before the *first Saturday* of the semester for which the election is made.

III. For first-year students the following schemes of elections, or such parts thereof as may be needed in making up a suitable amount of work, are recommended:

1. For candidates for the degree of Bachelor of Arts:

First Semester: Greek, four hours; Latin, four hours; Mathematics, three hours; French, four hours; English, two hours.

Second Semester: Greek, four hours; Latin, four hours; Mathematics, four hours, French, four hours.

2. For candidates for the degree of Bachelor of Philosophy:

First Semester: Latin, three hours; Mathematics, three hours; French, four hours; German, four hours; English, two hours.

Second Semester: Latin, four hours; Mathematics, four hours; French, four hours; German, four hours.

3. For candidates for the degree of Bachelor of Science:

First Semester: Mathematics, three hours; French or German, four hours; English, two hours; General Chemistry, three hours; other studies three or four hours.

Second Semester: Mathematics, four hours; French or German, four hours; Physics, five hours; General Chemistry or English, two or three hours.

4. For candidates for the degree of Bachelor of Letters.

First Semester: Mathematics, three hours; French, four hours; German, four hours; History or other studies, five hours.

Second Semester: French, four hours; German, four hours; English, two hours; History or other studies, six hours.

IV. Except as provided in (II) and (III) each student may elect his studies and may pursue them in any order he may choose, subject only to the following restrictions:

a. Before entering on any study the student must give the professor in charge satisfactory evidence that he is prepared to pursue it with advantage.

b. If he is a candidate for a degree, he must, as early as possible in his course, take all the courses "prescribed" for the degree he seeks.

c. No student is allowed to elect merely a part of a course without special permission of the Faculty.

d. No credit is allowed a student for work in any course, unless the election of the work is formally made and reported to the Registrar before the work is begun.

e. After the first Saturday of each semester no study can be taken up or dropped without special permission of the Administrative Board. All requests for permission to take up or drop studies must be made in writing on specially provided blank forms and in accordance with the rules printed thereon.

f. The Faculty requires a student to drop a part of his work at any time, if in its opinion he is undertaking too much; or to take additional work if it thinks he is not sufficiently employed.

g. The Faculty reserves the right to withdraw the offer of any study not chosen by at least six persons.

V. After matriculation a student cannot, without special permission of the Faculty, be admitted to examination in any one of the courses given, until he has received in the University the regular instruction in such course.

VI. The student is urged to make his choice of studies with care, and with reference to some plan. The members of the Faculty are ready to give advice and assistance in this regard.

VII. Students expecting to graduate in any given year must report to the Registrar at the opening of the year and ascertain what prescribed work, if any, is still lacking for the degree sought.

EXAMINATIONS.

a. Admission Examination.

1. A student who wishes to take the examination for admission at a time not announced in the Calendar (see page 53), must make application to the Dean of the Department and pay to the Treasurer a fee of five dollars before he can be admitted to examination.

b. Semester Examinations.

2. All students of this Department, whether candidates for a degree or not, if at work on the credit system, are required to attend all the examinations in the courses of study they pursue.

3. No student absent from any regular examination in any course of study that he may have pursued, is allowed to take such omitted examination before the next regular examination in that course. In cases of great urgency, however, the Faculty may grant students special permission to be examined at an earlier date.

4. Any student reported as passed "*Conditionally*" in any course, must remove the condition within one year from the date of the examination in which it was incurred; otherwise, the course passed conditionally is regarded and treated as "*Not Passed*."

5. No credit for any course is given a student reported as "*Not Passed*" in that course until he has again pursued it as a regular class exercise and has passed the regular examination therein.

c. Removal of Conditions, etc.

6. Any student who desires to remove a condition incurred at the admission examination, or at any other time, or who desires to take a class examination from which he was absent at the regular time, must make application to the Registrar and receive from him a blank form for presentation to the instructor in charge of the examination. The blank, when filled, must be deposited by the student with the Registrar within one week from the date entered upon it by the examiner.

RELATION TO OTHER DEPARTMENTS.

1. Candidates for a degree in this Department of the University, who wish to pursue studies in any other department, may be granted that privilege, provided they lack, at the beginning of the academic year, no more than sixteen hours of graduation and take no more than eight hours of work in any given semester in this Department in connection with the semester's work in the other department.

2. All students admitted from other departments of the University to the privileges of this Department, are regarded in the class room as members of this Department, and are required to pass the regular examinations with the classes in which they are enrolled. Violations of this requirement will be deemed a forfeiture of the privileges of this Department; but this rule is not to be interpreted as applying to those who are permitted to attend lectures or other exercises without being enrolled.

ATTENDANCE AND DISCIPLINE.

The State of Michigan extends the privileges of the University, with only moderate charges, to all persons of either sex, who are qualified for admission. Thus it does not receive patronage, but is itself the patron of those who seek its privileges, and its honors. It cannot, however, be the patron of idleness or dissipation. Its crowded classes have no room except for those who assiduously pursue the studies of their choice, and are willing to be governed in their conduct by the rules of propriety.

Students not in their places at the opening of the semester must present written excuses from their parents or guardians for the delay.

Such delinquencies as tardiness, absence, deficiencies, and offences against good order, in the several departments of instruction, are ordinarily dealt with by the instructor in charge of the department in which they occur. Flagrant cases are reported to the Faculty for adjudication.

Students are suspended or dismissed, whenever in the opinion of the Faculty they are pursuing a course of conduct seriously detrimental to themselves or the University.

The following is a By-Law of the Regents:

"Whenever any Faculty is satisfied that a student is not fulfilling, or likely to fulfil, the purpose of his residence at the University, or is for any cause an unfit member thereof, the President shall notify his parents or guardians, that they may have an opportunity to withdraw him, and if not withdrawn within a reasonable time he shall be dismissed."

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty dollars*; for all others, *forty dollars*.

Special Examination Fee.—A fee of *five dollars* is required of all persons who take the examination for admission at a date not announced in the Calendar (see page 53).

Diploma Fee.—For all alike, *ten dollars*. A fee of *one dollar* is charged for the Teacher's Diploma.

For laboratory fees and other expenses, see pages 40 to 42.

*The Matriculation Fee and the Annual Fee must be paid in advance; no portion of these fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year. The Auditing Board have authority, under certain conditions, to remit the Special Examination Fee.

Graduate School.

A special Announcement giving additional information in regard to the Graduate School was issued in the spring of 1899. Copies of this Announcement can be had by addressing Mr. James H. Wade, Secretary of the University.

THE Graduate School is organized within the Department of Literature, Science, and the Arts. Its management is entrusted to an Administrative Council, consisting of the President of the University, the professors and junior professors in the Faculty of the Department, and such other persons as may be elected to membership. The purpose of the school is to bring into greater prominence the numerous advanced courses of instruction that have been developed from the continual extension of the elective system; to secure a more efficient and systematic administration of this higher work; and to provide as far as possible for the separate instruction of graduate students.

ADMISSION AND REGISTRATION.

All applicants for admission to the Graduate School must first report to the Dean of the Department of Literature, Science, and the Arts, and present their credentials. They will then be referred to the Secretary of the Administrative Council, for the arrangement of courses of study.

The privileges of the school are open to graduates of the Department of Literature, Science, and the Arts of this University, and to graduates of other universities and colleges, who satisfy the Administrative Council that they are qualified to pursue with profit the advanced courses of study offered in the school.

Graduates of institutions where the undergraduate courses of study are not substantially equivalent to the course prescribed at this University, will ordinarily be required to do an additional amount of undergraduate work, or to prolong their term of residence, before being admitted to full candidacy for a higher degree.

Graduates of this University, or of other institutions, who do not wish to become candidates for a degree, may be admitted and registered as special resident graduates.

Graduates of other institutions who are candidates for a bachelor's degree in the Department of Literature, Science, and the Arts, are not registered in the Graduate School.

COURSE OF INSTRUCTION.

The courses of instruction offered in the Department of Literature, Science, and the Arts, and described on pages 55 to 107, are all open to graduate students who satisfy the professors in charge that they are qualified to pursue the work to advantage. In all branches of study provision is made for the instruction of graduate students.

The work of candidates for a higher degree is not confined strictly to the courses referred to above. Each student chooses three lines of study, a major study and two minor studies, which, after approval by the Council, he pursues under the immediate supervision of a special committee, consisting of the professors in charge of the studies chosen, the professor in charge of the major study being chairman. The nature of the work prescribed, and of the committee's oversight, varies in different cases according to the subjects chosen, the degree sought, and the previous attainments of the student. The work may consist of attendance upon certain specified courses, or of reading to be done privately and reported upon, or of an original research to be carried on more or less independently. In general, the method followed is that of the so-called university system, described on page 114, with modifications as circumstances may make advisable. The essential features of this system are specialization of study, a final examination, and a thesis. A thesis is always required of a candidate for a doctor's degree and of a non-resident candidate for a master's degree; for a master's degree in residence, the requirement may be waived at the discretion of the committee in charge of the student's work. The final examination for a degree is conducted under the direction of the committee, and the result of the examination is reported to the Faculty of the Department of Literature, Science, and the Arts.

REQUIREMENTS FOR GRADUATION.

The degrees conferred on the completion of approved courses of study in the Graduate School are Master of Arts, Master of Science, Doctor of Philosophy, and Doctor of Science.

THE MASTERS' DEGREES.

The masters' degrees are open to Bachelors of Arts, Philosophy, Science, or Letters of this University or of any other reputable university or college. The degree of Master of Arts is the one usually conferred, though candidates who pursue studies along scientific lines may, at their option, receive the degree of Master of Science. A residence of at least one year at this University is required, except as stated below.

Residents.—A student who has received a bachelor's degree may be recommended for a master's degree after completing the prescribed term of residence, and passing an examination on the course of study approved by the Administrative Council. A thesis may, or may not, be included in the requirements for the degree, as the committee in charge of the student's work may determine.

A student properly qualified may be permitted to pursue at the same time studies for a master's degree, and studies in any of the professional schools, on condition that the term of study and residence in the Graduate School be extended to cover at least two years.

Non-Residents.—A Bachelor of Arts, Bachelor of Philosophy, Bachelor of Science, or Bachelor of Letters, of this University, who has already completed a portion of the term of residence prescribed for a master's degree, may be allowed to continue his studies for the degree without further residence at the University, on such conditions as the Administrative Council may determine in each case. *This privilege is restricted to graduates of this University.*

THE DOCTORS' DEGREES.

1. The doctors' degrees are open to all persons who have received a bachelor's degree; but no student will be accepted as a candidate for a doctor's degree who has not a knowledge of French and German sufficient for purposes of research. The degree of Doctor of Philosophy is the one usually conferred, though candidates who pursue studies along scientific lines may, at their option, receive the degree of Doctor of Science.

2. It is not intended that the doctor's degree shall be won merely by faithful and industrious work for a prescribed time in some assigned course of study, and no definite term of required residence can be speci-

fied. As a rule, three years of graduate study will be necessary, the last two semesters of which must be spent at this University. The period of three years, however, may be shortened in the case of students who, as undergraduates, have pursued special studies in the direction of their proposed graduate work.

3. No student will be enrolled as a candidate for a doctor's degree until he has been in residence as a graduate student for at least one year. [This rule may be waived in the case of those who come properly accredited from a Graduate School of some other University, and of those who, as undergraduates in this University, have shown special proficiency in the line of their proposed graduate work.]

4. A student wishing to become a candidate for a doctor's degree must make a formal application to be so enrolled at least two semesters prior to the time of presenting himself for examination.

5. A candidate for a doctor's degree must take a major study that is substantially co-extensive with some one department of instruction in the University. He must also take two minor studies, one of which may be in the same department as the major, but involving a more thorough treatment of the same. Both minors must be cognate to the major, and all studies must be subject to the approval of the Administrative Council.

6. **THE THESIS.**—The thesis is of great importance. It must exhibit creditable literary workmanship and a good command of the resources of expression; but it must depend for acceptance more upon its subject-matter than upon its formal or rhetorical qualities. It must be an original contribution to scholarship or scientific knowledge. The inquiry should be confined within narrow bounds. The treatment should be as concise as the nature of the matter permits, and show familiarity with the history of the problem treated, with the literature bearing upon it, and with the latest methods of research applicable to it. Every thesis should contain a clear introductory statement of what it is proposed to establish or to investigate, and likewise a final résumé of results. It should also be accompanied by an index of contents and a bibliography of the subject. It is expected that the preparation of an acceptable thesis will usually require the greater part of one academic year.

SPECIAL REGULATIONS RELATING TO THE HIGHER DEGREES.

1. Applicants for an advanced degree are required to announce to the Council through the Secretary, as early as the tenth of October of each year, the particular branches of study to which they wish to give special attention. The supervision of their work will then be intrusted to the proper committee.

2. The subject of the thesis for a doctor's degree must be chosen,

and must be approved by the committee concerned, as early as the first of November of the college year in which the applicant expects to take the degree; and the subject of the thesis for a master's degree, when required, must be chosen and approved as early as the first of December.

3. The thesis must be completed and put into the hands of the chairman of the proper committee as early as the first of May of the year in which the applicant expects to take the degree.

4. The thesis must be prepared for close scrutiny with reference not only to its technical merits, but also to its merits as a specimen of literary workmanship. It must be preceded by an analytical table of contents and a carefully prepared account of the authorities made use of.

5. The thesis must be read and defended in public at such time as the Council may appoint, and, in case of a master's degree, a bound copy, either written or printed must be deposited in the University library.

6. Every candidate for the degree of Doctor of Philosophy or Doctor of Science, in case of the acceptance of his thesis, is required to have the thesis printed in full or in part as may be approved by the responsible committee. He is also required to deposit one hundred and fifty copies of the printed thesis in the University library, these copies to be used for exchange with other universities;—provided, however, that in cases where this requirement would work hardship, it may be waived on recommendation of the candidate's committee. To guarantee the printing of the thesis, every candidate for the doctor's degree is required to deposit with the Treasurer of the University, between the date of the acceptance of his thesis and the time fixed for his examination, the sum of fifty dollars, which deposit will be returned to him in case of failure to pass his examination, or whenever he shall cause his thesis to be printed at his own expense, or shall have it published in a form and under auspices approved by the responsible committee. In case the thesis is not immediately printed, a type-written copy must be placed in the University library.

In the printing of the thesis at his own expense, the candidate will be expected to use good substantial paper and slightly typography. A page four inches by six, with outside margins of at least one inch, is recommended.

FEES AND EXPENSES,*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

*The Matriculation Fee and the Annual Fee must be paid in advance; no portion of these fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

Annual Fee.—For Michigan students, *thirty dollars*; for all others, *forty dollars*. The annual fee required of all graduates who are granted the privilege of pursuing studies for a master's degree *in absentia*, is *ten dollars*.

Diploma Fee.—For all alike, *ten dollars*. A fee of *one dollar* is charged for the Teacher's Diploma.

For laboratory fees and other expenses, see pages 40 to 42.

Department of Engineering.

• A special Announcement giving further information in regard to this Department is published annually. The Announcement published in 1899 contained a Register of Alumni from 1860 to 1898 inclusive, and gave the positions held by them since graduation. For copies of this Announcement or other information relating to the Department, address Professor Charles E. Greene, Dean of the Department of Engineering, Ann Arbor, Michigan.

IN the legislative act under which the University was organized in 1837, provision was made for instruction in engineering. Work was begun in this line in 1853, and the first degrees were conferred in 1860. The engineering courses were included in the Department of Literature, Science, and the Arts, until the close of the collegiate year, 1894-95. At that time the Department of Engineering was established by the Board of Regents.

Persons who wish to become professional engineers are offered thorough courses in civil, mechanical, electrical, and chemical engineering. The work extends through four years. The aim of the Department is to lay a foundation of sound theory, sufficiently broad and deep to enable its graduates to enter understandingly on the further investigation of the several specialties of the profession; and at the same time to impart such a knowledge of the usual professional practice as shall make its students useful in any position to which they may be called. While the adaptation of theory to practice can be thoroughly learned only by experience, there are many matters in which the routine work of an engineering field party, office, or draft-

ing room can be carried out on a greater or less scale in a training school. The technical branches are under the direct care of those who have had professional experience as well as a full scientific training, and in all particulars the courses embody as close an imitation of the requirements of active labor as the instructors who have the several branches in charge can devise.

The academic year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901).

REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 134.]

[For admission of students not candidates for a degree, see page 135.]

Applicants for admission must be at least sixteen years of age, and must present satisfactory evidence of good moral character. They must bring credentials from their last instructor, or from the last institution with which they have been connected.

Unless admitted on diploma from an approved school (see page 137), any student who desires to become a candidate for a degree must pass examinations in the subjects described below. Before entering upon the examination each applicant must present his credentials to the Dean of the Department at his office in the Engineering Building. Certificates and diplomas from schools other than those officially examined by the University do not excuse an applicant from the admission examinations.

Students who have satisfied any one of the four groups of requirements for admission to the Department of Literature, Science, and the Arts (see pages 44 to 51), are admitted upon completing the requirements in Plane Trigonometry and in Chemistry.

ADMISSION OF CANDIDATES FOR A DEGREE.

The subjects on which applicants for admission to any of the courses leading to a degree in engineering will be examined are as follows:

English Language.—*Grammar.*—Selections for analysis and parsing will be set, arranged to test the applicant's knowledge of the leading facts of English Grammar. To meet this requirement, a review of the subjects should be had during the last year of the preparatory course.

Composition and Rhetoric.—The purpose of the examination in composition is to test the applicant's ability to write good English. To this end he will be asked to write two essays of not less than two hundred words each, one upon a subject drawn from books he has read, and the other upon a subject drawn from his experience or observation. The language of these essays must be grammatical and clear. The spelling, punctuation, and capitalizing must be correct. The applicant must show ability to discriminate in the use of words and to construct well-organized sentences and paragraphs. A topical outline should accompany each essay.

The requirement in English Language is identical with the requirement in English for admission to the Department of Literature, Science, and the Arts. For further suggestions regarding preparation, and for lists of books from which subjects for composition will be chosen, see page 46.

English Literature.—Daily recitation for at least one year will be requisite. Stopford A. Brooke's English Literature (edition of 1896), or any other manual, may be used for an outline of the subject. As much time as practicable should be given to the careful reading of representative authors in each period.

French, German, or Latin.—Applicants may offer French, German, or Latin, one of these three languages being required. It is expected that at least two years will be given to preparation in the language offered. The requirements in each are as follows:

French.—The whole subject of French Grammar. The applicant will be expected to read at sight easy French, and to translate correctly into French simple English sentences. The first year ought to be spent on the grammar and easy reading, and the second devoted to reading good modern French, accompanied by grammatical analysis and exercises in writing. The texts read should be chiefly narrative and conversational prose; modern, rather than classic, dramas should be read.

German.—(1) Ability to pronounce German correctly and to take part with reasonable correctness and facility in a simple conversation upon some topic drawn from the applicant's preparatory work.
(2) Thorough familiarity with the every-day facts of the grammar, to

be evidenced by putting illustrative English phrases into German.
(3) Ability to translate at sight a passage of fairly easy prose.

Latin.—Jones's First Latin Book, on an equivalent amount in any other introductory text-book, four books of Caesar's Gallic War, and one of the orations of Cicero.

Mathematics.—*Algebra*.—Fundamental Rules, Fractions, Simple Equations, Involution and Evolution, the Calculus of Radicals, and Quadratic Equations, as given in Olney's Complete School Algebra, or an equivalent in other authors.

Geometry.—Plane, Solid, and Spherical Geometry as given in Beman and Smith's Plane and Solid Geometry, or an equivalent in other authors.

Trigonometry.—Plane Trigonometry as given in Olney's Elements of Trigonometry, or an equivalent in other authors.

N. B.—It is very desirable that High Schools whose graduates are received on diploma arrange their courses so as to include a portion of both algebra and geometry in their last preparatory year. Students who do not come from diploma schools should take a similar review if they expect to succeed in the study of mathematics in the University.

Physics.—An amount represented by Carhart and Chute's Elements of Physics. Laboratory work in physics is urgently advised, though not required; but students who have completed a course in laboratory practice may expect to derive advantage from it if they take work in the physical laboratory in the University (see page 151).

Chemistry.—The requirement is intended to cover one year's work. As a text-book, Freer's Elementary Chemistry, or an equivalent amount of work in Remsen's Introduction to the Study of Chemistry, is recommended. In either case the text should be accompanied by laboratory work.

History.—General History as presented in such a work as Myers's General History, and one year's work in United States History and Civil Government. Johnston's History of the United States, McLaughlin's History of the American Nation, and Fiske's Civil Government or Hinsdale's American Government are recommended as text-books.

Botany, Physical Geography, or Astronomy.—The applicant may offer any *one* of these subjects. The requirements, intended to cover a half-year's work in each subject, are as follows:

Botany.—Laboratory work for half a year with occasional recitations and review exercises. The method followed in Spalding's Introduction to Botany, or other modern text-book of similar plan and scope, may serve to indicate the kind of work desired.

*Students entering at the beginning of the second semester (February 11, 1901) should be prepared in the mathematics of the first semester in addition to the other requirements for admission.

Physical Geography.—Tarr's Elementary Physical Geography, especially Chapters 9 to 21 inclusive, or an equivalent.

Astronomy.—Newcomb and Holden's Astronomy, Briefer Course, Young's Elements of Astronomy, or an equivalent. A knowledge of the principal constellations is required.

ADMISSION TO ADVANCED STANDING.

1. Graduates of the Department of Literature, Science, and the Arts of this University, or of any other reputable college, are admitted without examination to advanced standing as candidates for a degree in engineering, and are excused from a considerable portion of the general requirements for graduation (see page 163). The remaining requirements can be completed in two years, or, possibly, in a single year, if the student takes as electives, while an undergraduate, some of the courses open to him in the Department of Engineering. A knowledge of differential and integral calculus, of analytical mechanics, of elementary drawing, and of descriptive geometry, is needful for the advanced work.

2. Students who have completed at least one year's college work in an approved college, and who bring explicit and official certificates describing their course of study and scholarship, and testifying to their good character, are admitted to advanced standing without examination, except such as may be necessary to determine what credit they are to receive for work done in the college from which they have come.

3. Students who have not completed a year's college work in an approved college, but, previous to entering this department of the University, have pursued studies beyond those required for admission, may be admitted to advanced standing on passing the regular entrance examinations, and examinations in such undergraduate studies as they may ask to be credited with in advance.

4. Rules relating to admission to advanced standing:

a. Any student, whether a candidate for a degree or not,

who applies for advanced standing on the conditions stated in paragraphs (2) and (3) above, must present to the Dean a statement showing the amount of work done in the subjects in which credit is asked.

b. The application for advanced standing should be made to the Dean before the first of November, or (if the student be matriculated at the beginning of the second semester) before the fifteenth of March. The Dean will then furnish a blank form for presentation to the professors in charge of the several subjects named in the blank.

c. Credits must be secured before the fifteenth of December or (if the student be matriculated at the beginning of the second semester) before the tenth of April.

d. No credit will be given for advanced standing after the dates named in (c).

e. An account once closed cannot be reopened without special permission of the Faculty.

ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.

Persons who desire to pursue studies in this department, and do not desire to become candidates for a degree, are admitted on the following conditions:

1. All persons under twenty-one years of age must pass the regular entrance examinations.

2. Persons over twenty-one years of age must show that they have a good knowledge of English and are otherwise prepared to pursue profitably the studies they may desire to take up. Every applicant ought to have the training received in a good high school; and a knowledge of algebra, geometry, trigonometry, physics, and chemistry, equivalent, at least, to that prescribed in the requirements for admission, will be necessary.

3. Should a student who enters under the preceding provision (2) subsequently become a candidate for graduation, he must pass the regular entrance examination, at least one year previous to the time when he proposes to graduate.

4. Students not candidates for a degree who wish credit for studies pursued before admission are referred to the rules relating to advanced standing given above.

5. Students not candidates for a degree are expected to attend the lectures, recitations, and examinations in the branches prescribed for the regular students, and are required to take enough work to occupy them profitably.

TIME OF EXAMINATION.

The examination for admission to the Department of Engineering will be held on Thursday, Friday, and Saturday, September 20, 21, and 22, 1900. Applicants will not be examined at any other time except on payment of a special fee of *five dollars*.

As the examination begins at 8 A. M. on Thursday, it will be necessary for all applicants for admission on examination to present their credentials to the Dean of the Department, at his office, on Wednesday, September 19, between the hours of 9 and 5, and receive from him papers admitting to the examination.

The examinations in the several subjects will be in writing and will be held in Tappan Hall in accordance with the schedule given below:

THURSDAY, SEPTEMBER 20.

TAPPAN HALL

8 A. M.	Physics.....	Lecture Room
10 A. M.	History and Civil Government.....	Lecture Room
2 P. M.	Latin	Lecture Room
2 P. M.	German.....	Room 10
4 P. M.	Chemistry	Lecture Room

FRIDAY, SEPTEMBER, 21.

8 A. M.	Geometry.....	Lecture Room
10 A. M.	Botany.....	Lecture Room
10 A. M.	Physical Geography.....	Lecture Room
10 A. M.	Astronomy.....	Lecture Room
2 P. M.	Latin	Lecture Room
2 P. M.	French.....	Room 12
2 P. M.	German.....	Room 10
4 P. M.	Trigonometry.....	Lecture Room

SATURDAY, SEPTEMBER, 22.

8 A. M.	Algebra	Lecture Room
10 A. M.	English Literature.....	Room 10
2 P. M.	English	Lecture Room
4 P. M.	Chemistry	Lecture Room

ADMISSION ON DIPLOMA.

[For further information relating to the rules governing admission on diploma, see page 54.]

Students presenting graduation certificates from any of the schools approved by the Faculty of the Department of Literature, Science, and the Arts, signed by the superintendent or the principal of the school, are admitted without examination to the Department of Engineering. But if such certificate, though it might admit a student to the Department of Literature, Science, and the Arts, shows any deficiencies in the requirements for admission to the Department of Engineering, such deficiencies must be made up, or substitutions secured from the Dean; extra studies may be credited on advanced standing, if the subjects are taught in either of the two departments.

The certificate must state that the student has sustained his examinations in all the studies prescribed for admission to the Department of Engineering, or in all the studies prescribed in some one of the four groups of requirements for admission to the Department of Literature, Science, and the Arts (see pages 44 to 51), and is recommended for admission to the University. It must be presented to the Dean of the Department within a year and three months after graduation from the school, and the student must then begin his work.

THE WORK OF THE DEPARTMENT.

The studies pursued in the earlier part of the course comprise, in *Mathematics*, advanced algebra, analytic geometry, and the elements of differential and integral calculus; in *French* and *German*, an amount covering in all about a year and a half of study; in *English*, courses in higher English grammar and composition; in *Physics* and *Chemistry*,

studies of the principles; and in *Drawing*, practice in geometrical and in mechanical drawing, and in the study of descriptive geometry.

The more technical subjects are taken up in the latter part of the course. Some of these subjects are of equal value to all classes of engineering students, such as analytical and applied mechanics, the strength and resistance of materials, and the metallurgy of the useful metals, especially iron and steel; others are adapted more particularly to the special wants of the students in the several courses. Their general scope may be seen from the following descriptive outline.

DESCRIPTION OF THE COURSES.

Drawing.—A very complete course in mechanical drawing is given, embracing plane projection drawing, isometric drawing, descriptive geometry, and the elementary principles of coloring and shading, with original problems executed in the drawing room. Examples from numerical data are always given when suited to the conditions of the problem in hand. Students in mechanical engineering are required to sketch pieces of machinery, and afterwards to make working drawings suitable for use in the shops. The plans of surveys, plane-table work, maps, designs in engineering construction, and the thesis drawings naturally come under this head. Instruction is also given in free-hand drawing, topographical drawing, ornamentation and lettering, shades and shadows, linear perspective, and drawing for stone cutting. The work in drawing occupies the student a part of almost every day throughout the course.

There are four large and well-lighted drawing-rooms, three of which are in the engineering building and one in the engineering laboratory. There are also special rooms for blue-printing and a dark room for photography.

Mechanical Practice and Shop Work.—The aim of the instruction in this department is to make the student, as far as time will permit, acquainted with the best mechanical practice; the instructors in all practical work are men of wide experience, selected for their mechanical skill; and the department attempts to keep in touch with the most improved methods of mechanical construction.

The courses of instruction all begin with a systematic series of graded exercises, to give the student familiarity with the common tools used in the particular branch of work he is pursuing; and in connection with each course the theory of the process is taught by lectures or by assigned reading. The student thus becomes fitted to execute an ordinary piece of mechanical work and at the same time acquires familiarity with sources of information bearing upon such work. At a later stage in the course the student is taught to apply the principles previously studied in the

class room, and to combine skill and knowledge in the transformation of crude materials into articles which have a market value.

In *Wood Work and Pattern Making*, after the student has completed the preliminary series of graded exercises, he is set to making and assembling the parts of some complete piece of carpenter or joiner work, and he then devotes the remainder of the time, about three-fifths of the whole, to the pattern work. Special stress is laid upon this part of the course. The student shapes, forms, and builds up patterns for castings in iron, brass, etc.; allows for shrinkage; makes core boxes; and becomes as familiar as possible, in the time allowed, with all the details of practice. Each class, with the help of the instructors, is expected to make a full set of the patterns needed for the construction of some special piece of working machinery.

In the *Foundry* the student learns to mould in green sand, in dry sand, and in loam, both for brass and for iron castings. Instruction is given in the making of cores for various purposes, and their use in the moulds; and in the art of selecting and mixing metals so as to produce the kind of material desired, careful attention being paid to the making of composition metals for specific purposes. Each student is required to take part in all of the work about the cupola and the brass furnaces, and to assume his share of their management during the periods of melting and casting.

In the *Forge Shop* the student is required to make forgings from a large variety of irons and steels. In this way he becomes familiar with different kinds and qualities of materials suited for forge work; he learns how to heat, forge, anneal, harden, and temper such tools as are used in machine shops; and he also has practice in soldering and brazing. The object of the course is to enable the student to acquire a certain degree of skill in practice, and at the same time impart to him a knowledge of the principles governing such processes of forging as an engineer is likely to be called upon to direct.

In the *Machine Shop* the instruction is conducted on the same plan as in the pattern shop. On the completion of the series of graded exercises, the student begins the construction of parts of machines. Each class undertakes the building of one or more simple machines, or pieces of apparatus; the work being planned in such a way as to give opportunity for learning general shop manipulation. Advanced students are also allowed to elect extra work and to assist the skilled workmen in the construction of larger machines.

Manual Training.—In all the above-described courses advanced work can be taken by students who wish to become specially skilled in certain lines, or who desire to fit themselves for instructors in Manual Training Schools or in shops of that character.

A description of the engineering shops is given on page 146.

Surveying.—(a) *For Students in Civil Engineering.*—The course covers a full academic year and includes text-book work, lectures, recitations, and field practice. The methods of surveying and computing used in laying out work are explained in detail; each student is required to make plats, maps, and the necessary calculations from actual surveys; and instruction is given in the proper care, use, and adjustments of instruments. There is an ample and varied supply of instruments for the use of students.

The class room instruction embraces the following topics: instruments and their adjustments; surveys for the enclosure and division of land; some account of the United States Land Survey; city surveys and town plats; surveys of lines of communication, such as roads, railways, and canals; hydrography; special surveys for various purposes of construction, such as laying out buildings, culverts, and abutments, and locating bridge piers; and, in general, the elements of all the ordinary operations to be expected in the professional practice of a civil engineer, but without including Land Surveying in the broad sense of the term. The principal text-books used are Johnson's Surveying, Raymond's Surveying, and Searle's Field Engineering. The more important works of reference are also easily accessible to the student.

The practical work outlined below, and carried on in the fall, early winter, and spring of each year, is intended to cover the elementary operations required in making surveys for engineering works, such as roads, streets, railways, canals, enclosures of land, public improvements, and the laying out of structures on the ground.

The steel-tape practice includes linear measurements, ranging lines, measuring and laying-out angles, laying-out circular curves, and making the records and computations pertaining to such work. With the transit and steel tape the student has practice in reading angles; traverse surveying; laying-out circular curves, simple and compound; and running straight lines. He is also required to keep the records and make the calculations connected with such work, to make plats, and to compute areas. The practical work with the level and rod includes simple levelling, check levels, and profile levelling, together with the necessary field notes and checks. The practice in topography embraces the use of the transit and stadia; plane-table work; and surveying with aid of the camera, including the development of negatives and the printing and mounting of photographs. From the field notes and photographs maps are made by the student. In this connection, also, the student has practice in making blue prints from negatives and from drawings.

During the last month of the academic year the class is in camp as a

field party. A survey is made for some line of communication, usually a railroad, including exploration, preliminary and located lines, easements to curves, profile levelling, check levels, profile making, cross-section data, cross-sectioning, transfer of line to plugs near grade points, witnessing, and, in general, the preparation of the line for construction up to the point of beginning excavation. In this connection good field and office records are required; profiles and maps are made; and the necessary computations, including those for earthwork quantities, are worked out.

In addition to the railroad survey some other piece of field work is undertaken, the selection being made according to the fitness of the locality, the number and the previous experience of the members of the class, the time, and the weather, the purpose being to fix, by practical application, the principles learned from text-book, lectures, or previous experience. Within the past few years work of the character indicated below has all been done, though not all in any one year:—small triangulation surveys, in which there is considerable reading of angles; compass surveys; shore-line surveys; surveys for special purposes, like town sites, bridge sites, cemeteries, or particular areas of unusual shape; resurveys of the United States Land Survey, including the finding and restoring of lost corners, and the subdivision of sections; contouring; hydrography; gauging of streams; levelling for special purposes, such as mill powers, lake levels, and the determination of the fall of streams; and, in general, any ordinary piece of field work, for which the locality chosen for the camp may afford favorable conditions.

The work in camp also includes office work along the various lines of field work, such as the computation of triangulations; reduction of careful measurements; calculation of earthwork, azimuth, areas, and elevations; mapping; platting; and profile-making.

(b) *For Students in Mechanical Engineering.*—The student in mechanical engineering takes a short course in the use of instruments, which is nearly all practice. He is required to read angles with a transit; to make a traverse; to make steel-tape measurements; to do simple levelling; and to compute and plat an enclosure survey. The aim of the course is to cover the simple manipulations in the ordinary use of surveying instruments, and to qualify the student for such duties in this line as are apt to fall to the mechanical engineer, such as mapping an enclosure, staking out a building and fixing the levels for it, laying out foundations for machines or boilers and establishing the levels for them, lining up shafts, setting water power machinery, and preparing lines for transmission of power by wire-rope, compressed air, or water.

(c) *Other Courses.*—Courses in Land Surveying, the United States Land Survey, the Canadian Survey, and in other specialties are provided,

if properly qualified persons present themselves in sufficient number to form classes.

Geodesy.—For students prepared to undertake the work a course is offered, comprising lectures, reference reading, and written class reports, on geodetic methods in the field with special reference to successful present day practice. Some consideration is given to notable historical surveys, and constant use is made of reports and standard works of reference.

Highway Construction.—A short course, comprising lectures, text-book, and examinations, is given to students of civil engineering, on the construction and maintenance of roads, streets, pavements, and walks. References are made to existing examples and present practice. Byrne's Highway Construction is used as a text-book.

Municipal Engineering.—A course of lectures, prescribed reading, and recitations covers the special field of city engineering, points out its connection with, and dependence upon, other branches of engineering work, and shows how to apply the principles of engineering to the modern problems arising in the building and improving of cities. Among the topics treated are streets and their present uses, sewers, waterworks, public franchises, assessments, bridges, building inspection, fires, lighting, street cleaning, and garbage disposal. The instruction is not intended to be of a technical character, but it aims to set forth the principles that should guide the city engineer in his relations to various matters of public concern, and to supplement and apply to this special field the instruction given in other courses. This course should not be taken by undergraduates before their last year of residence.

Strength and Resistance of Materials.—A course of recitations and lectures continuing through the first half-year is devoted to this subject, and is attended by all the engineering students except those pursuing the chemical engineering course. The action of the different materials under applied forces, the distribution of stress, and the proper proportions to be given to the different parts of structures in order that they may safely fulfil their several functions, are carefully studied. Greene's Structural Mechanics is used as a text-book.

Tests of wood, iron, steel, cement, and other building materials are made in the Engineering Laboratory.

Theory of Structures.—Roof and bridge trusses, in wood and iron; arches, in wood, iron, and stone; trestles; brick and stone masonry; foundations; tunnels; and, in general, the whole theory of structures are discussed. In this course Rankine's Civil Engineering is used as a text-book, supplemented by full explanations, additional notes, lectures, examples and problems, and illustrated by models, photographs, working drawings, and blue-prints.

A course of instruction extending through a year is also given in the graphical analysis of roof and bridge trusses and arches. The student is made familiar with both the analytical and graphical methods of treatment and thus possesses ready proof of the accuracy of his calculations. Greene's Roof Trusses, Bridge Trusses, and Arches are used as text-books.

Hydraulics.—The laws of the flow of water through orifices and pipes and over weirs; the gauging of streams and rivers; the designing of works for water supply, drainage, and sewerage; the laying out of canals; and the subject of river and harbor improvements are treated in this course. The text-book used is Merriman's Hydraulics.

Machinery, Prime Movers, and Millwork.—A course of instruction is given in mechanism, or the general principles of machinery, involving the study of gearing, screws, cranks, and levers, and the dynamics of machinery. In the study of prime movers, special attention is given to turbine and other water motors, and to steam engines. In the theory of machine construction, problems involving the strength and design of machines, and the materials used in their construction, and also involving the application of the principles of electricity, are studied at length in connection with such examples as illustrate the best practice. The instruction in millwork covers the distribution of power and the arrangement of shafting and machinery in manufacturing establishments. Practical problems involving the strength of shafting, belting, and gearing are fully treated. Tests are made to determine the efficiency of machines, and the value of lubricants.

Design of Shop Machinery.—The student is taught to design one or more of the standard machines used in shops. He is shown how to combine his theoretical and his practical knowledge so as to conform to the best mechanical practice. He designs one or more complete machines and makes a detailed drawing of each part for shop use. The drawings that possess merit and are carefully worked out are subsequently used in the shops. Instruction is also given in blue-print work. The course is intended in every respect to represent, as far as possible, the operations of actual business.

Designs in Engineering and in Machine Construction.—Contemporaneously with the study of theory students are required to work out problems in design. They are furnished with the usual data for a design, and the kind or type of structure or machine is indicated. They are then expected to make the necessary calculations, paying particular attention to proportioning the different parts so as to secure strength, simplicity, and effect, and to present at a specific date complete working drawings, giving full details, accompanied by bills of materials, estimates, and specifications.

A course in **Thermodynamics** embraces the study of the principles governing the action of heat engines in general, hot-air and gas engines, air compressors, compressed-air engines, and refrigerating apparatus.

Steam Engineering.—The work in this branch covers the practical use of steam. Furnaces and boilers are studied with reference to proper combustion of fuel; to securing maximum evaporative efficiency; and to proportioning the parts for strength, durability, and accessibility for cleaning and repairs. The care and management of engines and boilers, both in use and out of use, are fully considered. A study is made of the principal steam pumps and pumping engines. The practical application of steam to heating and ventilating purposes is treated by lectures, and by inspection of actual plants. Tests are made to determine the value of fuels, quality of steam, and the efficiency of furnaces, boilers, and engines.

Marine Engineering and Naval Architecture.—The instruction in this branch comprises the study of marine steam engines and propelling instruments, the hydraulics of ship building, buoyancy, metacentre, stability and trim, weight and centre of gravity, waves and rolling, structural strength, speed and resistance, propulsion by sails and by steam engines, laying-down and taking-off, and other topics.

Metallurgy.—A course of instruction by lectures and recitations is given upon the subjects of fuel, refractory material, iron, and steel. The lectures are illustrated by charts and drawings of furnaces and appliances used and by samples of furnace products.

Primary and Storage Batteries.—A brief course combines theory and experimental work in measuring electromotive forces, polarization, internal resistance, and efficiency. Several types of storage cells are in constant use.

Electrical Measurements.—This course extends through an entire year and is devoted to practical work in the laboratory with the most modern apparatus. In addition to exact methods of measuring resistances, electromotive forces, and currents, it includes the calibration of the measuring instruments employed, the determination of capacity in absolute measure, the measurement of inductances, and the determination of the hysteresis curves of iron and steel.

Dynamo Electric Machinery.—The time given to this course is about equally divided between the study of the theory of generators and motors, and the determination in the electrical engineering laboratory of characteristic curves, of the series turns required to compound for constant potential, and of the efficiency of generators and motors.

Alternating Current Machinery.—To the theoretical study of this subject is added laboratory work with alternators, transformers, and two-phase or three-phase transmission. Highly satisfactory machines

have been built by electrical engineering students in the engineering shops.

Design of Electrical Machinery.—The course in electrical design gives the fundamental principles and illustrates them by numerical calculations of electromagnets, of direct current machines, motors, alternators, and transformers. The lecture course is supplemented by exercises in drawing in which each student makes working drawings to accompany his own designs.

Industrial Chemistry.—Under this head come those courses which treat of chemical processes on a manufacturing scale. The chief subjects are: Fuels; water; the acid, alkali, cement, and glass industries; by-products from coal and wood; starch, glucose, and sugar; fermentation and distillation; fats, oils, and soaps; bleaching and dyeing; tanning; the paper manufacture, etc.

Chemical Engineering.—This course is designed to meet the demands of manufacturers for men capable of intelligently directing manufacturing processes and handling machinery. To this end sufficient chemistry is introduced into the course to enable the graduate to act as his own chemist on most occasions. The instruction includes thorough laboratory drill in qualitative and quantitative analysis, courses in organic chemistry, chemical technology, metallurgy, and a special laboratory course in connection with some chosen manufacturing industry.

The engineering studies are, in the main, those required for the course in mechanical engineering; the student gains a knowledge of the construction and use of machinery, and has practical drill in the drawing rooms and shops; but the chemical studies indicated above take the place of the advanced mathematics and the higher work in engineering design.

By a proper selection of elective studies, and an additional year of college work, the graduate in chemical engineering can also secure the degree of Bachelor of Science in mechanical engineering.

Visits of Inspection.—As often as practicable, visits are paid to neighboring manufacturing establishments, and to electric light and electric power stations, for the purpose of acquiring a knowledge of the methods employed in building, in the construction of bridges, machinery, and ships, and the best practice in electrical manufacturing and engineering on a large scale.

EXAMINATIONS.

Examinations, usually in writing, are held at the end of each semester, but the classes are liable to be examined at any time, without notice, on any portion of their previous work.

FACILITIES FOR INSTRUCTION.

The collections for illustrating the instruction given comprise models, drawings, photographs, lithographs, and blue prints representing trusses, arches, and details of construction in iron, wood, and stone; also shapes of iron, working models of turbines and engines, and working drawings of a number of bridges. These collections are receiving additions from year to year, by gift and purchase, and are invaluable to the student.

Tests of engines and boilers, and of machinery in general, will be made on request, and the profit of such work devoted to extending the facilities of the engineering laboratory. The data of all experiments and tests made are kept in the laboratory records. Tests of materials are also conducted for private parties, and reported upon when desired.

All the laboratory work is on a practical basis, and is done as nearly as possible as it would be done in any well arranged manufacturing establishment. There is a metallurgical laboratory connected with the chemical laboratory, amply supplied with assay furnaces and other appliances. The latest and best books on professional subjects are added yearly to the library, where they are accessible to all; and frequent references are made to them in the class room as the various subjects are brought forward.

PHYSICAL LABORATORY.

For a description of the physical laboratory, see page 30.

CHEMICAL LABORATORIES.

For a description of the chemical laboratories, see page 31.

ENGINEERING SHOPS.

The engineering shops are in a group of connected buildings, containing about 17,000 square feet of floor space devoted to shop work.

The *Wood and Pattern Shop*, 40 by 80 feet, is equipped with the tools and machinery usually found in a first-class establishment. One end of the shop contains the work-benches and the tools needed for hand work; the other contains a good variety of wood-working machinery, much of which was built in the shops. Above the wood-room a pattern-loft, 40 by 80 feet, contains a large collection of patterns made by students during the past few years.

The *Foundry*, 60 by 40 feet, is equipped with two iron cupola furnaces, one capable of melting six hundred pounds, and the other two tons, of iron an hour; two brass furnaces of a capacity of 150 pounds each; a modern core-oven; elevator; crane; blowers; and a supply of flasks and small tools adapted to the work to be done. A large part of this equipment was made in the shops.

The *Forge Shop*, 30 by 40 feet, contains twelve forges and anvils, a drill press, an emery wheel, pressure and exhaust blowers, and many small tools.

The *Machine Shop*, 40 by 80 feet, contains lathes, planing machines, drill presses, milling machines, a shaper, and other tools for working in iron. Much of the machinery was made in the shop. The tool room is well supplied with small tools.

The *Drawing Room*, 32 by 54 feet, is supplied with blue-print apparatus, drawing desks, and other furniture needed for the use to which the room is put.

The central portion of the building, 32 by 54 feet, contains in the basement a well-ventilated wash-room, and on the first floor an engine room with a 10 by 30 Reynolds-Corliss engine, a storeroom and an office for the superintendent. The attic is used for storage.

New machinery is added to each shop from time to time for the accommodation of engineering students and others desiring instruction and practice in the use of tools for working in wood and metal. Opportunity is afforded to become familiar with the more common materials and forms of construction used in engineering structures, buildings, and machinery. In all work an effort is made to follow the practice of the best shops.

ENGINEERING LABORATORY.

The *Engineering Laboratory*, 40 by 80 feet, is devoted to experimental work in connection with the testing of engines, boilers, pumps, indicators, belting, gearing, lubricants, and strength of materials, and to such original work as can be undertaken with advantage. The work also extends to the testing of engines, boilers, and water-wheels of neighboring mills and electric plants. The Knowles and the Gordon pumping engines at the City Water Works have been fitted up by the company with especial reference to the convenience of engineering students in making tests. The equipment contains, among other things, a 100,000-pound Olsen testing machine; a 2,000-pound cement testing machine; Thurston and Ashcroft oil testing machines; a Stirling boiler for high pressure; a high speed automatic engine; a Corliss engine; a Rider hot-air engine; Wheeler and Wainwright surface condensers; an Alden absorption dynamometer; a Giddings traction recording dynamometer; an Emerson power-scale; several other forms of dynamometers; a large, electrically driven chronograph, built in the laboratory; a 36-foot open mercury column; special apparatus for testing pressure and vacuum-gauges and indicator springs; gauges; indicators; thermometers; pyrometers; tachometers; standard weights; steam pumps and injectors; rotary and centrifugal pumps; water meters; water motors, including a special universal water motor, built in the laboratory, together with pressure

tanks and pumps for testing motors; hydraulic rams; water-wheels; air-pumps; blowers; apparatus for making tests on radiators and pipe coverings; apparatus for furnace gas analysis; a street railway motor; and other apparatus having special reference to work of investigation.

ELECTRICAL LABORATORY.

The entire ground floor of the physical laboratory is devoted to experimental work in electricity. The rooms for electrical measurements contain solid stone-capped piers, and currents under a pressure ranging from 2 to 220 volts are available.

The laboratory is supplied with apparatus from the best American and European makers. It contains galvanometers and resistance boxes from Hartmann & Braun, Elliott Brothers, Nalder Brothers & Co., Queen & Co., and Willyoung & Co.; a series of ammeters and voltmeters from the Weston Co., for both direct and alternating currents; also wattmeters, condensers, electrodynamometers, electrostatic voltmeters, three Kelvin balances, standard cells, standard resistance coils, standard condensers, and an Ayrton & Perry standard of self-inductance.

In the dynamo room are two 10-light arc machines, two constant potential machines, and a 33 K. W. composite wound alternator made for the University by the Fort Wayne Electrical Corporation. These are all run from a counter shaft which is driven by a 50 H. P., 220-volt motor made by the Excelsior Electric Co. In addition, a small alternator for single phase, two-phase, or three-phase experimental work is run by a separate motor. Arc lamps, banks of incandescent lamps, resistances, rheostats, transformers and storage batteries complete the equipment. The transformers include a set for conversion from two-phase to three-phase transmission and the reverse. A well equipped photometric room adjoins the dynamo room.

The new University lighting plant, consisting of two 75 K. W. Thompson-Ryan generators and one 25 K. W. Westinghouse generator, is available for instruction in the department. The two large machines are connected by the Arnold system to two 15 by 14 engines and run at a speed of 250 revolutions per minute. The Westinghouse machine is directly connected to a Russell 9 by 12 automatic engine running at 300 revolutions per minute. The latter is located at the hospitals. These may be lighted independently, or may be supplied with current from the central plant on the campus by means of heavy mains and a "booster." The system is a 220-volt one throughout, with both incandescent and arc lamps (two in series) on the same circuits. All the feeders and mains are underground, except those running from the central plant to the hospitals and to the observatory.

The Arnold system permits of connecting either dynamo to either

engine, or of disconnecting either so that it may be tested for efficiency by purely electrical methods. A large number of motors, varying in capacity from 1 to 50 H. P., are in service, and are available for testing purposes.

OTHER LABORATORIES, LIBRARIES, AND MUSEUMS.

For a description of other University laboratories, libraries, and collections for the study of art, archæology, ethnology, mineralogy, palæontology, zoology, etc., and for general information concerning the University, see pages 24 to 42.

ASTRONOMICAL OBSERVATORY.

For a description of the astronomical observatory, see page 25.

GYMNASIUMS.

For a description of the gymnasiums, see page 35.

THE ENGINEERING SOCIETY.

Several organizations of students are maintained, aside from the usual literary societies, for the reading of papers and holding discussions in various scientific lines. The Engineering Society, composed of and officered by students of this department, holds weekly meetings, at which papers of technical interest are read, and reports made upon observation and experiments. A reading room is maintained by the Society, accessible to all students of the department. Several engineers of prominence have spoken before the Society the past year. An annual, called the *Technic*, containing papers read before the Society, abstracts of theses, contributed articles from alumni, and other matters of professional interest, is published by the students.

COURSES OF INSTRUCTION.

The Courses of Instruction are subject to change from time to time; those announced for the year 1899-1900 and required for graduation, as stated on pages 162 to 165 are described below, together with some advanced elective and technical courses which are designated accordingly. The amount of credit toward graduation assigned to each course is indicated by the expressions *one hour*, *two hours*, etc., an *hour of credit* being given for the satisfactory completion

of work equivalent to one exercise a week during one semester. Lectures and recitations are usually one hour in length, but in laboratory work, drawing, and other practical exercises, a longer attendance is required in order to secure an hour of credit.

The courses given in the Department of Literature, Science, and the Arts, and described on pages 55 to 106, are (with the exception of the courses in French and in German, for which special permission is required) all open as electives to engineering students who are qualified to pursue them with advantage.

Students are classified and assigned to sections by a committee of the Faculty.

FRENCH.

FIRST SEMESTER.

- A. Beginners' Course. Two sections. *Three hours.* Mr. GAUSS.
- C. Descriptive Prose. *Three hours.* Mr. GAUSS.
- D. Scientific Reading. *Three hours.* Mr. GAUSS.

SECOND SEMESTER.

- B. Narrative Prose. Two sections. *Three hours.* Mr. GAUSS.
- E. Current Scientific Literature. *Three hours.* Mr. GAUSS.

GERMAN.

FIRST SEMESTER.

- A. Elementary Course. Thomas's German Grammar, and a German Reader. *Three hours.* Mr. DIETERLE.
- C. Descriptive Prose. Two sections. *Three hours.* Mr. DIETERLE.
- D. Scientific Reading. Four sections. *Three hours.* Mr. DIETERLE.

SECOND SEMESTER.

- B. Elementary Course, continued. *Three hours.* Mr. DIETERLE.
- E. Scientific Reading, continued. Four sections. *Three hours.* Mr. DIETERLE.

ENGLISH.

FIRST SEMESTER.

- 1. Paragraph Writing. Three sections. *Two hours.* Mr. SMITH.

SECOND SEMESTER.

- 1a. Theme Writing. Three sections. *Two hours.* Mr. SMITH.

MATHEMATICS.

Courses must be taken in the order of their numbers.

FIRST SEMESTER.

1. Algebra and Analytic Geometry (I). Four sections. *Four hours.* Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
3. Calculus. Four sections. *Five hours.* Professor ZIWET, Assistant Professor MARKLEY, and Mr. HALL.
6. Calculus and Mechanics (II). Three sections. *Four hours.* Professor ZIWET and Dr. GLOVER.

SECOND SEMESTER.

2. Analytic Geometry (II). Four sections. *Four hours.* Mr. HALL, Dr. GLOVER, Mr. GODDARD, and Mr. BUTTS.
4. Calculus and Mechanics (I). Four sections. *Five hours.* Professor ZIWET, Assistant Professor MARKLEY, and Mr. HALL.

PHYSICS.

FIRST SEMESTER.

2. Heat, Electricity, and Magnetism. Lectures and recitations. *Five hours.* Dr. A. TROWBRIDGE.
Course 2 must be preceded by Course 1 and by a course in general or in analytical chemistry.
- 3b. Physical Laboratory Work for Beginners. Five sections. *Two hours.* Professor REED and Dr. A. TROWBRIDGE.
Course 3b is also given in the second semester. It must be preceded or accompanied by Course 1. Students presenting notebooks from High School physical laboratories approved by this department, may be allowed *three hours* of credit for *two hours* of work.
7. Mathematical Electricity and Magnetism. *Three hours.* Professor PATTERSON.
Course 7 must be preceded by Course 2. A knowledge of calculus is required.
8. Heat. Laboratory work. *Two hours.* Dr. GUTHE.
Course 8 must be preceded by Course 2.
9. Theory of Heat: Preston. *Two hours.* Dr. GUTHE.

SECOND SEMESTER.

1. Mechanics, Sound, and Light. Lectures and recitations. *Five hours.* Professor REED.

For Course 1 a knowledge of plane trigonometry is indispensable.

- 3b. Physical Laboratory Work for Beginners. *Two hours.* Professor REED and Dr. A. TROWBRIDGE.

See note to Course 3b in first semester.

- 3c. Laboratory Work in Mechanical and Electrical Measurements. Three sections. *Three hours.* Dr. GUTHE and Dr. A. TROWBRIDGE.

Course 3c must be preceded by Course 2. It is designed for students who wish to prepare for the study of dynamo-electric machinery.

10. Mathematical Electricity and Magnetism. *Two hours.* Professor PATTERSON.

Course 10 must be preceded by Course 7.

16. Theories of Solution, Electrolytes, and the Voltaic Cell. Lectures and laboratory work. *Three hours.* Dr. GUTHE.

Course 16 must be preceded by Course 2 in electrical engineering and by a laboratory course in general inorganic chemistry.

CHEMISTRY.

EITHER FIRST OR SECOND SEMESTER.

- A. Principles of Chemistry. Dr. SULLIVAN.

For Course A an elementary knowledge of general chemistry is necessary.

ANALYTICAL CHEMISTRY AND ORGANIC CHEMISTRY.

FIRST SEMESTER.

1. Qualitative Analysis. Recitations and laboratory work. *Ten hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.

3. First Steps in Qualitative Analysis. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.

Course 3 must be preceded by a laboratory course in general inorganic chemistry. It is continued in Course 3a in the second semester, and the two Courses, 3 and 3a, together, are equivalent to Course 1.

10. Organic Chemistry. Lectures and library studies. *Five hours.* Professor PRESCOTT.

Course 10 must be preceded by Course 1 or 3.

31. Chemical Technology. A study of chemical manipulations and reactions on a manufacturing scale. The chief subjects treated are: Fuels, water, the acid and alkali industry, cements; glass, and the destructive distillation of coal and wood with recovery of by-products. Lectures and assigned reading. *Five hours.* Mr. WHITE.

Course 31 must be preceded by Course 1.

SECOND SEMESTER.

3. First Steps in Qualitative Analysis. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON.
- 3a. Qualitative Analysis in continuation of Course 3. Recitations and laboratory work. *Five hours.* Professor O. C. JOHNSON and Dr. SULLIVAN.

See note to Course 3 in first semester.

4. Quantitative Analysis. Beginning Course. Recitations and laboratory work. *Seven hours.* Professor CAMPBELL.
Course 4 is open to those who have taken Course 1.
5. Advanced Quantitative Analysis. Laboratory work. *Five hours.* Professor CAMPBELL.
11. Organic Preparations. Laboratory work. *Two hours.* Assistant Professor GOMBERG.

Course 11 must be preceded by Course 10.

32. Organic Technology. The industrial chemistry of organic compounds. Among the subjects treated are: Starch, glucose, and sugar; fermentation and distillation; fats, oils, and soaps; bleaching and dyeing; tanning; paper-manufacture. Lectures and assigned reading. *Five hours.* Mr. WHITE.

Course 32 must be preceded by Courses 10 and 31.

34. Special Chemistry. Work selected from the advanced courses offered in the Department of Literature, Science, and the Arts. *Five hours.* Professor CAMPBELL.

METALLURGY.

FIRST SEMESTER.

1. Fuel and Refractory Material, Iron and Steel. *Three hours.* Professor CAMPBELL.
Course 1 must be preceded by Course 1 or 3 in analytical chemistry.
2. Micro-Metallography. The study of the microscopic structure of metals as related to their physical and chemical properties. Laboratory work with reading. *One hour.* Professor CAMPBELL.
Course 2 is open only to those who have completed Course 1, and who receive special permission.

ASTRONOMY.**FIRST SEMESTER.**

5. Spherical Astronomy. *Three hours.* Professor HALL.
In Course 5 some standard work on spherical astronomy is rapidly read, and special subjects are given out for discussion. It must be preceded by Course 4 and is intended for students interested in geodetic work.
13. Theory of Least Squares. *Two hours.* Professor HALL.

EITHER FIRST OR SECOND SEMESTER.

4. Practical Astronomy, Use of sextant and transit. *Three hours.* Professor HALL.
Course 4 requires a knowledge of spherical trigonometry and of differential and integral calculus.

SECOND SEMESTER.

9. Practical Astronomy; extended course. *Credit arranged with instructor.* Professor HALL.

MINERALOGY.**EITHER FIRST OR SECOND SEMESTER.**

1. Lectures and practice. *Two hours.* Professor PETTEE.

GEOLOGY.**FIRST SEMESTER.**

12. Elements of Geology. *Three hours.* Professor RUSSELL.

DRAWING.**FIRST SEMESTER.**

1. Geometrical Drawing. Four sections. *Two hours.* Mr. GOULDING.
4. Free-Hand Drawing. Pencil-Work; Pen and Ink; Sketching. Four sections. *Three hours.* Professor DENISON, Mr. WRENTMORE, and Miss HUNT.
10. Continuation of Course 8. *Two hours.* Professor DENISON and Miss HUNT.
Course 10 must be preceded by Courses 4, 7, 8.
13. Water-Color Drawing. *Three hours.* Professor DENISON and Miss HUNT.
Course 13 must be preceded by Course 8. It can be taken only by special permission.

SECOND SEMESTER.

5. Descriptive Geometry, Recitations and Drawing. Five sections.
Four hours. Mr. WRENTMORE and Mr. GOULDING.
Course 5 must be preceded by Course 1.
6. Shades, Shadows, and Perspective. *Three hours.* Professor DENISON.
Course 6 must be preceded by Course 5.
7. Free-Hand Drawing (advanced). *Three hours.* Professor DENISON and Miss HUNT.
8. Architectural and Water-Color Drawing. Two sections. *Two hours.* Professor DENISON, Mr. GOULDING, and Miss HUNT.
Course 8 must be preceded by Course 1 or 4.
14. Stereotomy. *Two hours.* Professor DENISON.
Course 14 must be preceded by Course 5.
16. Free-Hand Lettering. *Two hours.* Mr. WRENTMORE.
Course 16 must be preceded by Course 1.
17. Spherical Projections. *One hour.* Professor DENISON.
Course 17 must be preceded by Course 5.

SHOP PRACTICE.

All courses in shop practice are under the direction of Mr. W. L. MIGGETT, Superintendent of Shops. Lectures on materials and appliances used in shop-work are given and reading is assigned.

Special arrangements are made for students who desire to take more advanced work in the shop courses with a view to preparing themselves for teaching these subjects.

EITHER FIRST OR SECOND SEMESTER.

- 1a. Wood Work and Pattern Work. Three sections. *Two hours.*
- 1b. Wood Work. Advanced Course. Two or three sections. *Two hours.*
- 2a. Forging. Five sections. *Two hours.*
- 2b. Forging. Advanced Course. *Two hours.*
- 3a. Foundry Work. Three sections. *Two hours.*
- 3b. Foundry Work. Advanced Course. *Two hours.*
- 4a. Iron Work. Three sections. *Three hours.*
- 4b. Iron Work. Advanced Course. *Two hours.*

SURVEYING.

FIRST SEMESTER.

1. Lectures and Field Practice with Instruments. *Four hours.* Professor J. B. DAVIS.
The field practice in Course 1 continues during favorable weather until Christmas.

4. Use of Instruments. *One hour.* Professor J. B. DAVIS.
6. Continuation of Course 5. Phototopography. Field work and drawing. *One hour.* Professor J. B. DAVIS.
The ability to make photographic negatives will be of service.

SECOND SEMESTER.

2. Continuation of Course 1. Lectures and text-book. *Five hours.* Professor J. B. DAVIS.
3. Field Work in Camp for Four Weeks. Professor J. B. DAVIS.
Course 3 must be preceded by Courses 1 and 2. Except by special permission it is open only to students who are working for a degree in civil engineering.
5. Topography. Transit and Stadia. Plane Table. Field work and drawing. *Three hours.* Professor J. B. DAVIS.
Course 5 is given four times a week for thirteen weeks.
7. Geodesy. Geodetic Methods. Lectures and text-book. *Three hours.* Professor J. B. DAVIS.
Course 7 must be preceded by Courses 1 and 2. It is given five times a week for twelve weeks.

CIVIL ENGINEERING.

FIRST SEMESTER.

1. Municipal Engineering. Lectures and text-book. *Five hours.* Professor J. B. DAVIS.
4. Graphical Analysis of Structures. *Two hours.* Professor GREENE.
Course 4 must be preceded by Course 3.
5. Strength and Resistance of Materials. Two sections. *Two hours.* Professor GREENE.
Course 5 must be preceded by Course 4 in mathematics.
6. Engineering, Theory of construction. *Two hours.* Professor GREENE.
Course 6 must be preceded by Course 4 in mathematics.
7. Engineering Design. *Five hours.* Professor GREENE.
Course 7 accompanies Courses 5 and 6.
9. Hydraulics. *One hour.* Professor GREENE.
Course 9 must be preceded by Course 6 in mathematics.

Primarily for Graduates.

11. Engineering Design, advanced. *Five hours.* Professor GREENE.
12. Water Supply and Sewerage. *Two hours.* Professor GREENE.

SECOND SEMESTER.

2. Tests of Materials. *One hour.* Professor GREENE.
3. Graphical Analysis of Structures. Three sections. *Two hours.* Professor GREENE.

Course 3 must be preceded by Course 4 in mathematics.

5. Strength and Resistance of Materials. Two sections. *Two hours.* Professor GREENE.

Course 5 must be preceded by Course 4 in mathematics.

8. Engineering. Theory of construction. *Three hours.* Professor GREENE.

Course 8 must be preceded by Course 6.

10. Water Supply and Sewerage. *One hour.* Professor GREENE.

Course 10 must be preceded by Course 9.

Primarily for Graduates.

13. Economics of Railway Location. *One hour.* Professor GREENE.
14. Contracts and Specifications. *One hour.* Professor J. B. DAVIS

MECHANICAL ENGINEERING.

FIRST SEMESTER.

2. Elements of Mechanism. Two sections. *Two hours.* Professor DENISON.

Course 2 must be preceded by Course 1 in mathematics, and by Courses 1 and 5 in drawing.

3. Dynamics of Machinery. Two sections. *One hour.* Mr ANDERSON. Course 3 must be preceded by Course 4 in mathematics, and by Course 1 in physics.

4. Boilers. Steam Engines. *Two hours.* Assistant Professor ALLEN. Course 4 must be preceded or accompanied by Course 3.

8. Theory of Machine Design. *Three hours.* Professor COOLEY. Course 8 must be preceded or accompanied by Course 5 in civil engineering.

15. Prime Movers. Water Wheels and Steam Engines. *Two hours.* Professor COOLEY.

Course 15 must be preceded by Course 3.

22. Thermodynamics. Advanced Course. *Three hours.* Assistant Professor ALLEN.

Course 22 must be preceded by Course 13.

EITHER FIRST OR SECOND SEMESTER.

6. Machine Design. Machine Tools. *Two hours.* Mr. MIGGETT. Course 6 must be preceded or accompanied by Course 2, and be preceded by Courses 1, 4, 5 in drawing.

9. Laboratory Work. Power Measurements. Machine Testing. *Two hours.* Professor COOLEY, Assistant Professor ALLEN, and Mr. GRIMES.

Course 9 must be preceded by Course 3.

10. Machine Design. Hoisting Machinery. *Three hours.* Professor COOLEY and Mr. ANDERSON.
Course 10 must be preceded or accompanied by Course 8.
11. Laboratory Work. Steam Engineering. Two sections. *Three hours.* Professor COOLEY, Assistant Professor ALLEN, and Mr. GRIMES.
Course 11 must be preceded or accompanied by Course 4, 7, or 15.
12. Machine Design. Boilers and Engines. *Two hours.* Professor COOLEY and Mr. ANDERSON.
Course 12 must be preceded or accompanied by Course 8.

Primarily for Graduates.

16. Heating, Ventilation, and Plumbing. *Two hours.* Assistant Professor ALLEN.
Course 16 must be preceded by Course 4.
18. Hydraulic Machinery. *Two hours.* Professor COOLEY.
Course 18 must be preceded by Course 7 or 15.
19. Gas Engines. *Two hours.* Professor COOLEY.
Course 19 must be preceded by Course 13.
20. Laboratory Work. Advanced Course. *Two hours.* Assistant Professor ALLEN and Mr. GRIMES.
Course 20 must be preceded by Courses 9 and 11.

SECOND SEMESTER.

1. Elements of Machines. Nomenclature. Two sections. *Two hours.* Mr. ANDERSON or Mr. GRIMES.
5. Mechanism. Valve Gears. *Three hours.* Professor DENISON.
Course 5 must be preceded by Course 2.
7. Hydraulic Machinery. Two sections. *One hour.* Professor COOLEY.
Course 7 must be preceded by Course 3.
13. Steam Engines and other Heat Engines. *Three hours.* Assistant Professor ALLEN.
Course 13 must be preceded by Course 4.
14. Power Plants. Power Transmission. *Two hours.* Professor COOLEY.
Course 14 must be preceded by Course 4 or 7.
15. Prime Movers. Water Wheels and Steam Engines. *Two hours.* Professor COOLEY.
Course 15 must be preceded by Course 3.

Primarily for Graduates.

17. Compressed Air. Mechanical Refrigeration. *Two hours.* Professor COOLEY.
Course 17 must be preceded by Course 13.

21. Specifications and Contracts. *One hour.* Professor COOLEY.
Course 21 must be preceded or accompanied by Course 14.
22. Thermodynamics. Advanced Course. *Three hours.* Assistant Professor ALLEN.
Course 22 must be preceded by Course 13.
23. Machine Design, Advanced Course. *Three hours.* Mr. ANDERSON.
Course 23 must be preceded by Courses 10 and 12.

ELECTRICAL ENGINEERING.

FIRST SEMESTER.

2. Electrical Measurements. Recitations and laboratory work. *Four hours.* Professor PATTERSON and Dr. GUTHE.
Course 2 must be preceded by Courses 1, 2, 3 in physics; a knowledge of calculus is required.
5. Alternate Current Apparatus. Recitations and laboratory work. *Three hours.* Professor PATTERSON and Mr. JONES.
Course 5 must be preceded by Course 4.
6. Photometry of Electric Lamps. Recitations and laboratory work. *One hour.* Mr. JONES.
7. Design of Electrical Machinery. *Four hours.* Mr. JONES.
Course 7 must be preceded by Course 4a or 4b.

SECOND SEMESTER.

1. Primary and Secondary Batteries. Recitations and laboratory work. Six sections. *Two hours.* Dr. GUTHE.
Course 1 must be preceded by Courses 1, 2, 3 in physics, and by a course in general or in analytical chemistry.
3. Electrical Measurements. Continuation of Course 2. Lectures and laboratory work. *Three hours.* Dr. GUTHE and Dr. A. TROWBRIDGE.
- 4a. Dynamo-Electric Machinery. Lectures, recitations, laboratory work. *Four hours.* Professor PATTERSON and Mr. JONES.
Course 4a must be preceded by Course 2.
- 4b. Dynamo-Electric Machinery, as in Course 4a. *Three hours.* Professor PATTERSON and Mr. JONES.
Course 4b must be preceded by Course 3c in physics.
8. Distribution of Electricity. Lectures and recitations. *Two hours.* Mr. JONES.
Course 8 must be preceded by Course 4a.
10. Design of Electrical Machinery. Continuation of Course 7. *Two hours.* Mr. JONES.

Primarily for Graduates.

9. Alternating Current Phenomena. *Two hours.* Professor PATERSON.

Course 9 must be preceded by Course 5.

MARINE ENGINEERING.

Course 2 is designed for graduates and for undergraduates who have had the necessary preliminary training. Courses 1 and 3 are for graduates. Additional courses may be expected in 1900-01.

FIRST SEMESTER.

1. Naval Architecture. Professor COOLEY.

SECOND SEMESTER.

2. Marine Engines. *Three hours.* Professor COOLEY.
3. Ship-Building. Professor COOLEY.

MINING ENGINEERING.**SECOND SEMESTER.**

1. Exploitation of Mines. Methods of opening, laying-out, and working mines. *Five hours.* Professor PETTEE.

Course 1 requires a knowledge of mineralogy and general geology.

SEQUENCE OF STUDIES.

The studies of the first and second years are *prescribed*, except so far as credit obtained in advance may leave a place for substitutions, or the presentation of Latin as one of the requirements for admission may make some change necessary. In the third and fourth years some opportunity for elective studies is open.

The work for the first year is the same for all students. At the end of that year, the student makes his choice to continue in the civil engineering, the mechanical engineering, the electrical engineering, or the chemical engineering course. The order of studies for the first year is given below. An order of studies for the years following the first is given for the several courses in the announcements issued annually by the Department.

ORDER OF STUDIES FOR FIRST YEAR.

FIRST SEMESTER.

	EXERCISES PER WEEK.
French D or German D.*	3
English 1, Paragraph Writing.	2
Mathematics 1, Algebra and Analytic Geometry (I).	4
Drawing 1, Elementary Drawing.	2
Drawing 4, Freehand Drawing.	3
Shop Practice 2a, Forging (one-half of class); or 1a, Woodwork (one-half of class).	2
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SECOND SEMESTER.

French E or German E.	3
Physics 1, Mechanics, Sound, and Light.	5
Mathematics 2, Analytic Geometry (II).	4
Drawing 5, Descriptive Geometry.	4
Shop Practice 1a, Woodwork (one-half of class); or 2a, Forging (one-half of class).	2
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RULES AND REGULATIONS OF THE DEPARTMENT.

The rules and regulations relating to admission conditions and to election of studies are as follows:

ADMISSION CONDITIONS.

All students are regarded as strictly on probation, until they have removed all conditions incurred in the examination for admission to the Department. All such conditions must be removed during the year following the date of the examination. Students who have any admission conditions outstanding at the beginning of their second year of residence are not allowed to join their classes until such conditions are removed.

ELECTION OF STUDIES.

I. The maximum number of hours a week a student may elect in his first semester of residence is *sixteen*. For the remainder of the course, the maximum number, except by special permission, is *eighteen*.

N. B.—For students who are allowed to make up preparatory studies in the Ann Arbor High School a corresponding reduction is made from the maximum number of hours allowed them in the University.

* The student who enters with German will continue that language through the first year and begin French in the second year. The student who enters with French will continue French a year and then begin German. The student who enters with Latin will take French A or German A.

II. In cases of exceptional proficiency permission to take additional hours may be granted by the Faculty on special request; but in all cases requests for such permission must be made in writing on a blank form provided by the Dean, and must be filed with the Dean on or before the *first Monday* after the beginning of the semester in which the additional work is desired. No permission to take extra hours is granted to students in their first semester of residence.

III. The minimum number of hours a week a student may take, without special permission of the Faculty, is *twelve*. All requests for permission to take a smaller number than twelve must be presented to the Dean in writing.

IV. The work of students must all be arranged in conformity with the following regulations:

a. Before entering on any study the student must give the instructor satisfactory evidence that he is prepared to pursue it with advantage.

b. No student is allowed to elect merely a part of a course, without special permission of the Faculty.

c. No credit is allowed a student for work in any course, unless the election of the work is formally made and reported to the Registrar before the work is begun.

d. After the classification of students at the beginning of each semester no study can be taken up or dropped without special permission of the Faculty. All requests for permission to take up or drop studies must be made in writing on specially provided blank forms and in accordance with the rules printed thereon.

e. The Faculty requires a student to drop a part of his work at any time, if in its opinion he is undertaking too much; or to take additional work, if it thinks he is not sufficiently employed.

f. The Faculty reserves the right to withdraw the offer of any elective study not chosen by at least six persons.

g. After matriculation, a student cannot, without special permission of the Faculty, be admitted to examination in any one of the courses given, until he has received in the University the regular instruction in such course.

REQUIREMENTS FOR GRADUATION.

THE DEGREE OF BACHELOR OF SCIENCE.

To earn the degree of Bachelor of Science in civil, mechanical, electrical, or chemical engineering, the student must secure *one hundred and thirty Hours of Credit** in a prescribed course of study, as given below,

* For explanation of the term Hour of Credit see page 149, and for further information in regard to the courses prescribed for graduation, see pages 150 to 160.

and must present a satisfactory *thesis*. The diploma given indicates the line of study pursued. A time limit is not fixed; but four years is usually needed for the completion of the 130 hours of work.

Bachelors of Art, of Philosophy, of Science, and of Letters, of this University, and graduates of any other reputable college, are excused from some portions of the general requirements, and are recommended for the same degree with the regular students upon completing the remaining requirements. This work can be done in two years. The culture imparted by classical or other liberal training will be found to have its uses for one engaged in engineering work, and previous discipline of the faculties in exact research will enable the professional student to master more easily the requirements of the course. All the time the student can devote to general studies before taking up specialties will be well spent.

A choice between the four courses in engineering need not be made before the end of the first year.

GENERAL REQUIREMENTS.

The *general requirements* are as follows:

In French and German: fifteen hours, viz., Courses A, B, C, in one language, and Courses D, E, in the other.

In English: Courses 1, 1a.

In Mathematics: Courses 1, 2, 3.

In Physics: Courses 1, 2.

In Drawing: Courses 1, 4, 5.

In Shop Practice: Courses 1a, 2a.

In Mechanical Engineering: Courses 2, 3.

SPECIAL REQUIREMENTS.

The *special requirements* in the several courses are as follows:

1. In Civil Engineering.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Civil Engineering the student must satisfactorily complete, in addition to the *thesis* and the *general requirements* named above, courses as follows:

In Mathematics: Courses 4, 6.

In Physics: Course 3c.

In Chemistry: Course A; or in Analytical Chemistry: Course 3.

In Mineralogy: Course 1.

In Geology: Course 12.

In Astronomy: Course 4.

In Drawing: Course 14.

In Surveying: Courses 1, 2, 3, 5, 6.

In Civil Engineering: Courses 3, 4, 5, 6, 7, 8, 9.

In Mechanical Engineering: Course 15.

In Electrical Engineering: Course 4b.

In Elective Studies, taken in the Department of Engineering, or in the Department of Literature, Science, and the Arts: an amount sufficient to secure in all *one hundred and thirty Hours of Credit*.

2. In Mechanical Engineering.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Mechanical Engineering, the student must satisfactorily complete, in addition to the *thesis* and the *general requirements* named above, courses as follows:

In Mathematics: Courses 4, 6.

In Physics: Course 3c.

In Chemistry: Course A; or in Analytical Chemistry: Course 3.

In Metallurgy: Course 1.

In Shop Practice: Courses 1b, 3a, 4a, 4b.

In Surveying: Course 4.

In Civil Engineering: Courses 3, 5, 9.

In Mechanical Engineering: Courses 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14.

In Electrical Engineering: Course 4b.

In Elective Studies, taken in the Department of Engineering, or in the Department of Literature, Science, and the Arts: an amount sufficient to secure in all *one hundred and thirty Hours of Credit*.

3. In Electrical Engineering.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Electrical Engineering, the student must satisfactorily complete, in addition to the *thesis* and the *general requirements* named above, courses as follows:

In Mathematics: Courses 4, 6.

In Physics: Course 3b.

In Chemistry: Course A; or in Analytical Chemistry: Course 3.

In Shop Practice: Courses 1b, 3a, 4a, 4b.

In Civil Engineering: Courses 3, 5.

In Mechanical Engineering: Courses 4, 5, 6, 7.

In Electrical Engineering: Courses 1, 2, 3, 4a, 5, 6, 7, 8.

In Elective Studies, taken in the Department of Engineering, or in the Department of Literature, Science, and the Arts: an amount sufficient to secure in all *one hundred and thirty Hours of Credit*.

4. In Chemical Engineering.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Chemical Engineering, the student must satisfactorily

complete, in addition to the *thesis* and the *general requirements* named above, courses as follows:

In Physics: Course 3c.

In Analytical Chemistry: Courses 1, 4, 5, 10, 11, 31, 32, 35.

In Metallurgy: Course 1.

In Surveying: Course 4.

In Mechanical Engineering: Courses 4, 6, 7.

In Electrical Engineering: Course 4b.

In Elective Studies, taken in the Department of Engineering, or in the Department of Literature, Science, and the Arts: an amount sufficient to secure in all *one hundred and thirty Hours of Credit*.

GRADUATE COURSES.

THE DEGREE OF MASTER OF SCIENCE.

A candidate for the degree of Master of Science in this Department must have previously received the engineering degree of Bachelor of Science from this University, or, if graduated elsewhere, must satisfy the Faculty that he possesses equivalent attainments.

He must choose a *major* subject, which shall occupy one-half of his time, from the work given in this Department, and two *minor* subjects, each to occupy one-fourth of his time, to be selected from any work open to engineering students; all of the work, however, shall be subject to the approval of the Faculty. Study and residence for not less than one year are required. Among the courses described on previous pages (151 to 160), the following are arranged primarily for graduates:

In Physics: Courses 7, 10, 16.

In Civil Engineering: Courses 11, 12, 13, 14.

In Mechanical Engineering: Courses 16 to 23 inclusive.

In Electrical Engineering: Course 9.

In Marine Engineering: Courses 1, 3.

If a candidate for the degree of Master of Science desires to have his work count towards the degree of Civil Engineer, Mechanical Engineer, or Electrical Engineer, the major subject must be taken in the course in which he took his bachelor's degree, and he must submit a satisfactory thesis before the degree of Engineer will be conferred.

THE DEGREES OF CIVIL ENGINEER, MECHANICAL ENGINEER, AND ELECTRICAL ENGINEER.

The conditions on which the degree of Civil Engineer, as an advanced degree, is conferred are as follows:

The degree of Civil Engineer may be conferred upon Bachelors of Science of this University, who have taken the degree for a course in civil engineering, if they furnish satisfactory evidence that they have

pursued further technical studies for at least one year, and, in addition, have been engaged in professional work, in positions of responsibility, for another year. The first of the above requirements may be satisfied by pursuing at the University, under the direction of the Faculty, a prescribed course of study for an amount of time, not necessarily consecutive, equivalent to a college year. If the candidate does not reside at the University, his course of study must be approved in advance by the professor of civil engineering, and he must prepare a satisfactory thesis on some engineering topic, to be presented, together with a detailed account of his professional work, one month, at least, before the date of the annual Commencement at which he expects to receive the degree.

The conditions on which the degrees of Mechanical Engineer and Electrical Engineer, as advanced degrees, are conferred upon Bachelors of Science of this University who have taken the degree for a course in mechanical engineering, or in electrical engineering, are analogous in character and in amount to those given above for the degree of Civil Engineer.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.†

Fee for Special Entrance Examinations.—A fee of *five dollars* is required of all persons who take the examination for admission at a date not announced in the Calendar (see pages 40 and 136).

Diploma Fee.—For all alike, *ten dollars*.

Laboratory Courses.—The required laboratory courses cost approximately as follows: *Shop Practice.*—In the mechanical and electrical engineering courses, *thirty dollars*. *Physical Laboratory.*—A charge of *one dollar* is made for a course requiring one exercise a week during one semester, and at the same rate for the longer courses. *Mechanical Laboratory.*—The charge for each course is *five dollars*. *Chemical Laboratory.*—Students who take laboratory courses in chemistry are required to pay for the materials and apparatus consumed by them. The average cost is about *ten dollars*.

* The Matriculation Fee and the Annual Fee must be paid in advance; no portion of these fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year. The Auditing Board have authority, under certain conditions, to remit the fee for special entrance examinations.

† An annual fee of ten dollars is required of all graduates who are granted the privilege of pursuing studies for an advanced degree *in absentia*.

The fee required for any course has to be paid before the work of the course is begun.

The total amount of fees paid to the University during the whole four years' course, for matriculation, incidental expenses, materials used, and diploma, is, for Michigan students, from \$185 to \$210; and for others, from \$240 to \$265, varying more or less according to the student's actual laboratory expenses.

For additional information in regard to expenses see pages 40 to 42.

Department of Medicine and Surgery.

A special Announcement giving further information in regard to this Department is published annually. For copies of this Announcement or for other information relating to the Department, address Dr. Victor C. Vaughan, Dean of the Department of Medicine and Surgery, Ann Arbor, Michigan.

THE Department of Medicine and Surgery; for which provision was made in the legislative act by which the University was organized in 1837, was opened for students in 1850. The college year was lengthened from six to nine months in 1877. The course was lengthened to three years in 1880 and to four years in 1890.

The college year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901). The lectures continue till early in June. The examinations are then begun and concluded in time for the Commencement exercises.

REQUIREMENTS FOR ADMISSION.

Beginning with the year 1901 the requirements for admission to the Department of Medicine and Surgery will be materially increased. The requirements in force for the year 1900 are as follows:

Every candidate for admission must be at least seventeen years of age, and must present to the Faculty satisfactory evidence of a good moral character.

Women are admitted, as to all other departments of the University, on the same conditions as men.

All persons applying for admission are required to have a special form of recommendation properly filled out and signed. Blank forms for this purpose will be furnished on application to the Dean of the Department.

No student is permitted to enter with more than two conditions in the subjects required for admission, and all entrance conditions must be removed before the beginning of the student's second college year.

Subjects of Examination in 1900.

The subjects on which applicants for admission in 1900 will be examined are as follows:

English.—Each applicant will be asked to write an essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing.

Mathematics.—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures.

Algebra.—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities.

Geometry.—Plane Geometry.

Physics.—An amount represented by Carhart and Chute's Elements of Physics.

General Biology, or Botany and Zoology.*—Sedgwick and Wilson's General Biology, or Spalding's Introduction to Botany and Kingsley's Comparative Zoology.

History.—Myers's General History, or an equivalent; and Higginson's or Johnston's History of the United States.

Latin.—Four books of Caesar.

The examination for admission will be held Thursday, Friday, and Saturday, September 20 to 22, 1900. Applicants are required to present themselves at this time as they are expected to be in attendance on the first day of the term, when the regular course of instruction begins. All certificates and recommendations are to be presented to the committee on entrance requirements on the first day set for the examination.

Before admission to examination every applicant is required to present to the Secretary of the Faculty the Treasurer's receipt for the payment of the matriculation fee and the annual fee. It will, therefore, be necessary for him to apply first to the Secretary of the University at his office in University Hall, register his name as a student in the Department of Medicine and Surgery, and pay his fees to the Treasurer. In

* Physiology is accepted as a substitute for Zoology.

case of rejection, the money paid preliminary to examination will be refunded.

Exemption from Examination.—Certificates of matriculation in the Department of Literature, Science, and the Arts of this University (page 43), or in other literary colleges of good standing, and certificates of graduation in the *classical* or *Latin* courses of approved high schools,* and of other high schools and academies of equal standing, when accompanied by a recommendation filled in and signed by the principal of the high school or other institution which he has attended, will be accepted as evidence of proficiency in such subjects of the above list of requirements as are covered by the recommendation, and will exempt the student from examination in those subjects only.

Subjects of Examination in 1901 and thereafter.

The subjects on which applicants for admission in 1901 and thereafter will be examined are as follows:

English, Arithmetic, Algebra, Geometry, Physics, Latin.—In each, the same as described above for the year 1900.

Trigonometry.—Plane Trigonometry.

General Biology.—Each applicant will be required to have a knowledge of typical species of plants and animals with reference to structure, function, development, and relationship.

Chemistry.—General Inorganic Chemistry and Qualitative Analysis, as given in Freer's Text-book of General Chemistry and in Prescott and Johnson's Qualitative Analysis.

French or German.—The grammar and easy reading in *one* of these languages.

ADMISSION TO ADVANCED STANDING.

In order to be admitted to advanced standing, a student must have completed not only the didactic courses, *but the laboratory courses also*, already taken by the class to which he seeks admission. As a rule, the only laboratory courses which students applying for advanced standing have completed, are those in chemistry. When, in the judgment of the professor in charge, such a course is equivalent to that given in this Department, he may give the student credit for the work done, and thus avoid repetition. This, however, does not enable the student to finish the course earlier; it merely gives a few weeks of time which he may profitably spend on some advanced or optional course.

No credit can be given for lecture courses taken in schools unprepared to give the proper laboratory teaching. This applies to the clinical

* The approved schools comprise all those accepted by the Faculty of the Department of Literature, Science, and the Arts. Compare page 54.

branches as well as to the scientific. For instance, lectures on surgery, even when accompanied by clinical demonstrations, cannot be accepted in lieu of the course given in this Department in the third year, which provides for operations by the student on animals.

COURSE OF INSTRUCTION.

The Course of Instruction covers four college years of nine months each. The first two years are devoted to the more strictly scientific work which serves as a basis for the technical and clinical studies which follow. The forenoons are given to lectures and recitations, three each day; the afternoons to laboratory drill during the first two years, and to the study of methods of diagnosis and means of treatment during the third and fourth years. Four or five hours a day are required in the laboratory and the hospital.

SCHEDULE OF STUDIES.*

FIRST YEAR.

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Osteology,	3 hours a week.
General Anatomy,	2 hours a week.
General Chemistry,	5 hours a week.
Qualitative Analysis,	2 hours a week.
Bacteriology,	4 hours a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
General Anatomy,	2 hours a week.
Physics,	4 hours a week.
Organic Chemistry,	5 hours a week.
Histology,	4 hours a week.
General Chemistry,	2 hours a week.

LABORATORY WORK IN FIRST YEAR.†

<i>Subjects.</i>	<i>Time Required.</i>
Anatomy,	Every day for 12 weeks.
Chemistry,	Every day for 12 weeks.
Bacteriology,	Every day for 12 weeks.

* Optional advanced courses are offered in all the courses in the schedule.

† Four to five hours constitute a day's work in the laboratory.

SECOND YEAR.**LECTURES AND RECITATIONS IN FIRST SEMESTER.**

<i>Subjects.</i>	<i>Time required.</i>
Anatomy of Nervous System,	3 hours a week.
Physiology,	5 hours a week.
Hygiene,	3 hours a week.
Embryology,	4 hours a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Regional Anatomy,	1 hour a week.
Surgical Anatomy,	1 hour a week.
Physiology,	5 hours a week.
Physiological Chemistry,	3 hours a week.
Hygiene,	2 hours a week.
General Pathology,	2 hours a week.

LABORATORY WORK IN SECOND YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Anatomy,	Every day for 12 weeks.
Physiological Chemistry,	Every day for 12 weeks.
Histology,	Every day for 6 weeks.
Electrotherapeutics,	Every day for 6 weeks.
Physiology,	Four days a week for 6 weeks.

THIRD YEAR.**LECTURES AND RECITATIONS IN FIRST SEMESTER.**

<i>Subjects.</i>	<i>Time Required.</i>
Theory and Practice,	4 hours a week.
General Surgery,	2 hours a week.
Pharmacology and Therapeutics,	5 hours a week.
General Pathology,	2 hours a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Theory and Practice,	4 hours a week.
General Surgery,	2 hours a week.
Obstetrics,	4 hours a week.
Pharmacology and Therapeutics,	5 hours a week.

LABORATORY AND DEMONSTRATION COURSES IN THIRD YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Practical Pathology,	Every day for 8 weeks.
Clinical Medicine,	Every day for 6 weeks.
Nervous Diseases,	Every day for 6 weeks.
Operative and Minor Surgery,	Every day for 6 weeks.
Obstetrics and Gynæcology,	Every day for 6 weeks.
Ophthalmology, Otology, and Laryngology,	Every day for 6 weeks.
Practical Pharmacology,	Four days a week for 6 weeks.

CLINICAL COURSES IN THIRD YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Internal Medicine,	2 hours a week.
Surgery,	2 hours a week.
Gynæcology,	2 hours a week.
Ophthalmology,	2 hours a week.
Nervous Diseases,	1 hour a week.

FOURTH YEAR.

LECTURES AND RECITATIONS IN FOURTH YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Theory and Practice,	2 hours a week.
Special Surgery,	3 hours a week.
Gynæcology (First Semester),	4 hours a week.
Diseases of the Nervous System,	2 hours a week.
Dermatology and Syphilology,	2 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.
Medical Jurisprudence,	20 lectures.

CLINICAL COURSES IN FOURTH YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
Internal medicine,	4 hours a week.
Surgery,	6 hours a week.
Obstetrics and Gynæcology,	6 hours a week.
Dermatology and Syphilology.	2 hours a week.
Ophthalmology, Otology, and Laryngology,	6 hours a week.
Nervous Diseases,	2 hours a week.

BEDSIDE AND DISPENSARY INSTRUCTION.

Senior students are given charge of patients, and are required to make diagnoses, prescribe, dress wounds, and perform minor operations under the direction of the professor in charge. A lying-in-ward furnishes obstetrical cases, which are attended by the senior students in rotation.

SPECIAL LECTURES.

From time to time members of the Faculty give special lectures upon subjects included in their original researches. These lectures vary in number from three to six on each subject and are given at times when all students may attend them. Attendance is voluntary and no examinations are held. The special lectures announced to be given in 1899-1900 are on the following subjects:

1. History of the Great Epidemics.—Professor NOVY.
2. The Pathology of Venereal Diseases.—Assistant Professor WARTHIN.
3. Liquid Air.—Professor FREER.

The non-resident lecturers give special courses arranged to come at times when the students are best prepared to profit by them.

EXAMINATIONS.

Examinations (written, oral, or both written and oral) are held at the close of each course or semester. Students "*conditioned*" cannot apply for another examination in the same subject until the close of the next course or semester, except that a student conditioned at the close of the college year may ask for another examination in the first two weeks of the following year. Students reported "*not passed*" are required to take the course over again before applying for re-examination. Candidates for graduation, who fail in an examination, are allowed a re-examination before the entire Faculty. No student is recommended for graduation until he has completed all his required work and has passed all his examinations.

Further rules concerning examinations are given in the special Announcement of the Department.

INSTRUCTION FOR WOMEN.

The course of instruction for women is in all respects equal to that for men. Practical Anatomy is pursued by the two sexes in separate rooms, but in the lectures, in public clinics, in the several laboratories, and in various class exercises, it is found that both sexes may attend with propriety at the same time.

COMBINED COURSE IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS, AND IN THE DEPARTMENT OF MEDICINE AND SURGERY.

All the subjects of the first two years of the preceding schedule (with the exception of electrotherapeutics and the courses in regional and surgical anatomy) are taught in the elective courses open to students in the Department of Literature, Science, and the Arts. Students in that

department who intend to study medicine after taking the bachelor's degree, may shorten their total period of residence at the University by from a year to a year and a half or two years, if they pursue, as literary students, courses that cover the subjects required in the first two years of the medical curriculum. The precise amount of time gained will depend upon the amount of required medical work the student completes.

For a fuller description of the combined course see pages 107 to 110.

REQUIREMENTS FOR GRADUATION.

To be admitted to the degree of Doctor of Medicine, a student must be twenty-one years of age and possess a good moral character. He must have completed the required courses in laboratory work, and have passed satisfactory examinations on all the required studies included in the full course of instruction. He must have been engaged in the study of medicine for the period of four years. If admitted to advanced standing, he must have attended four full courses of medical lectures, *the last two of which must be in this Department*, and have passed the required examinations.

Graduates of other reputable medical colleges, wishing to take a degree in this school must regularly matriculate and do all work required in this school and not required in the school that has granted the diploma already held. The shortest term of residence for such graduates is one year. Graduates of other reputable medical schools may, however, without becoming candidates for a degree, pursue any of the graduate courses on the conditions stated below.

GRADUATE COURSES.

Graduates of this Department of the University, or of other medical schools, are admitted to any one or more of the regular courses of the curriculum on giving evidence of their ability to profit by the instruction given. Advanced courses, beyond the regular curriculum, are also arranged in several of the subjects taught. Graduate students are required to pay for each course, of six weeks duration, the sum of ten dollars in addition to the ordinary laboratory expenses of the course, which vary with the character of the work.

The nature of the work arranged for graduate students in some of the branches of instruction is shown by the following descriptive outline:

Hygiene and Bacteriology.—(a) A course in advanced bacteriological study, such as a student who has already completed the required courses in bacteriology may elect. (b) A course arranged especially for health

officers, and including the chemical and bacteriological examination of food, water, soil, and air. (c) A course of laboratory instruction in bacteriology, extending through four weeks (probably in April), arranged for health officers and physicians.

Electrotherapeutics.—(a) A course covering the subjects of electrolysis, phoresis and electric diagnosis, and the management of continuous and induced currents. (b) A study of the action and technique of useful appliances designed for using electricity as an aid to diagnosis or therapy in any branch of medicine and surgery.

Pathology.—A systematic course in pathological histology is open to graduates, as are also special courses in the pathological histology of organs, tumors, blood, etc. Those wishing to take the latter courses must have had the necessary preliminary training.

Physiology.—(a) A course in physiological methods, embracing the use of all the more ordinary forms of apparatus employed to record the movements of the animal body. The work is done in the first instance upon frogs, dogs, etc., and the experience thus gained is later employed in testing the reactions of the human body. The course is varied to meet the needs of the student and is intended as an introduction to the methods employed in original investigation. (b) For those who have sufficient training in laboratory methods, the apparatus and facilities of the laboratory are offered for the investigation of special problems.

Pharmacology.—A course in practical pharmacology is open to graduates in medicine and every facility is afforded them for investigation along special lines.

Chemistry.—Graduates may select work in any of the courses provided in the several departments of the University. The courses in analytical and organic chemistry are described on pages 90 to 94. Special studies for individual purposes may be undertaken. Opportunity for research is given. The chemical library is supplied with the extensive repositories of science required in research, and with a wide range of literature of applied chemistry. In any part of the laboratory graduates may select any work they are prepared to pursue.

Anatomy.—(a) A special course in the anatomy of the nervous system. (b) The investigation of special problems of anatomy. (c) The thorough anatomical study of regions of special surgical importance. (d) A course in histological technique, including the methods of preparing, staining, and sectioning tissues. The course is designed for those desiring to fit themselves for histological research or for work in pathological histology. (e) A course on the microscopic anatomy of the eye and ear and the central nervous system. (f) Original investigation in microscopic anatomy for such as are capable of undertaking the work.

FACILITIES FOR INSTRUCTION.

There are ample collections of plates, photographs, models, specimens, preparations, apparatus, and instruments, for illustrating the different studies embraced in the course. Additions are made from time to time to these collections so that the members of the Faculty are able to adopt every new method of illustration, and to exhibit to the classes each year all important improvements in the way of instruments and apparatus that are employed in the practice of medicine and surgery, and to show their application.

The following paragraphs may serve to indicate the extent of some of these collections and the character of the work done in the several laboratories. For further information in regard to the University museums, laboratories, libraries, and gymnasiums, see pages 24 to 37.

MUSEUM OF ANATOMY.

The museums of the late Professors FORD and SAGER, embracing several thousand specimens, the result of many years' labor in collecting and preparing materials intended to aid directly in teaching, are now the property of the university, and are used in the daily work of the class rooms. These museums contain a valuable collection of bones, illustrating healthy as well as diseased conditions, the various changes that occur from infancy to old age, and the processes of first and second dentition; dissections, general and partial, of the vascular, nervous, and muscular systems, both normal and abnormal; models of various portions of the body in wax, papier-maché, and plaster, illustrating morbid growths, skin diseases, etc.; preparations in the comparative embryology, neurology, and craniology of the vertebrata; in human embryology; in the anatomy and pathology of the diseases of women; etc. The collection of monstrosities, both single and double, of man and of the lower animals, is one of the largest in the United States.

ANATOMICAL LABORATORY.

The anatomical laboratory is admirably adapted for its purpose; it contains two well-lighted and well-ventilated dissecting rooms, one for men and one for women, and a third room for the study of the anatomy of the central nervous system. Suitable methods are employed for the preservation of anatomical material, and the student's work is facilitated by free access to osteological and other preparations.

The Anatomical Law of Michigan furnishes, without embarrassment, an ample supply of material for the purpose of practical anatomy. Every student is obliged to dissect thoroughly and carefully every part of the body during his course.

MUSEUM OF MATERIA MEDICA.

The museum of materia medica consists of a fairly complete collection of the crude substances used in medicine along with their principal preparations and active principles. The drugs are arranged in groups convenient for study, importance being laid not on their origin but on their action. The museum is also provided with several works of reference for the use of the students and with a number of graphic registrations of the action of drugs. It is open to students of the junior class at such hours as they arrange with the instructor.

CHEMICAL LABORATORY.

(See also page 31.)

The chemical laboratory provides thorough instruction and suitable appliances for the practical study of all branches of medical chemistry. In each of the two laboratory courses *required for graduation*, namely, qualitative chemistry (devoted to the study of chemical changes and incompatibilities), and physiological chemistry (applied to clinical uses and physiological study), students are taken in sections of limited number for daily drill in the class room to direct the daily practice in the laboratory. Before beginning laboratory work the student takes a preparatory course, with daily recitations, in chemical notation, and at the close of the work in each course is held to an examination.

ELECTROTHERAPEUTICAL LABORATORY.

The laboratory of electrotherapeutics is supplied with apparatus for illustrating all the various methods of generating electric currents, and for measuring currents, voltages, and resistances.

The students become practically familiar with the various electric modalities employed in the diagnosis and treatment of disease. Tests are made of the efficiency of the various forms of electrotherapeutic apparatus recommended to the medical profession; and experiments are conducted with a view to determine the relation of electricity and magnetism to the growth and development of the animal organism, and also to discover their influence on the lower forms of life, such as bacteria and their products.

It is the aim in this laboratory instruction to make the student practically familiar with the faults and the essential requirements of all forms of electrical apparatus used for therapeutical purposes.

PHYSIOLOGICAL LABORATORY.

The apartments provided for the physiological laboratory offer excellent facilities for practical work, whether of class instruction or of original investigation. A large and well-lighted room is appropriated chiefly to the use of undergraduate students, who perform under the direction of

instructors most of the fundamental physiological experiments. The subjects commonly embraced in the practical course relate to the physiology of the special senses, muscular contraction, nerve reflex action, circulation, respiration, and digestion. Smaller rooms are devoted to advanced work and original investigation. The laboratory has a good supply of apparatus, tools, etc., and is open daily for physiological experiment and research.

HISTOLOGICAL AND EMBRYOLOGICAL LABORATORY.

This laboratory is well supplied with microscopes, microscopical accessories, microtomes, imbedding apparatus, and other instruments used in histological and embryological work. During his term of instruction in the laboratory each student is furnished with microscopical reagents, a microscope, and a table for his own use, so that the practical work is carried out by each individual for himself. In the elementary course in histology an effort is made to teach the student the use of the microscope, the methods of teasing, the methods of mounting paraffine and celloidine sections, and the use of a number of the more commonly employed stains.

During his stay in the laboratory the student makes about one hundred and fifty preparations, and he is required to sketch them all as he makes them. These preparations are so arranged as to furnish him with specimens of typical cells and cell division, of all the elementary tissues, of the various glands and organs of the body, of the epidermis, of the central and peripheral nervous system, and of the sensory end-organs and the special senses.

In the course on microscopical technique, which is open only to those who have completed the elementary work, the student is instructed in the various methods of hardening, staining, imbedding, section-cutting, and injecting, the special methods of staining and counting red and white blood cells, and the use of the microscope in forensic medicine.

An optional laboratory course in the embryology of the salamander, the chick, and mammalia is offered, which is open to students who have completed the elementary work in histology and a course in microscopical technique, and have attended lectures in embryology. There is also an optional laboratory course in the microscopic anatomy of the brain and the special senses.

PHARMACOLOGICAL LABORATORY.

The pharmacological laboratory is situated in the medical building and consists of two chief rooms, one of which is used for chemical, the other for experimental, pharmacology. Each laboratory is supplied with apparatus and materials for original work in either branch of research, and any student or graduate receives every encouragement in the prose-

cution of such work. Among the apparatus recently introduced into this laboratory may be mentioned Runne's kymographion with endless paper, two sets of revolving drums, artificial respiration apparatus driven by an electric motor, time markers and signals (electric and clock-work), batteries and secondary coils, centrifugal and "shaker" apparatus, balances, combustion furnaces, etc.

PATHOLOGICAL LABORATORY.

This laboratory is supplied with microscopes, microtomes, paraffin ovens, and the other apparatus necessary in the study of pathologic histology. Each student is furnished with a locker containing a microscope with high and low powers, and is assigned to a table containing the necessary stains and reagents for practical work. These are furnished by the laboratory.

The supply of material for the study of pathologic histology is the result of collections made in the pathological institutes of Vienna and Freiburg, and embraces almost every known pathologic condition. This collection gives ample material for the regular courses, and, in addition, offers special opportunities to the advanced student who may wish to pursue studies in certain lines of special pathology, as the pathology of the nervous system, genito-urinary tract, skin, etc. It is especially to the graduate student that this collection presents a fine opportunity for special work, as he is thereby offered practically the same advantages as those given in the principal laboratories abroad.

In addition, an abundant supply of fresh material comes from the clinics of the University Hospital, and this is utilized to the fullest extent in the teaching both of gross and of microscopical pathology. The laboratory is fitted with a Bausch and Lomb carbonic acid freezing microtome for use in the making of quick diagnoses and in the preparation of fresh material for class study. By the use of this instrument stained sections may be had in three minutes after the removal of the tissues from the body, and the student is thus enabled to make a study of morbid changes impossible in hardened material.

The required course in pathologic histology lasts eight weeks, five afternoons a week being required, though Saturday afternoon is also usually taken for this work. The student studies the histology of morbid processes in fresh and in hardened material, in stained and in unstained sections, and applies chemical tests, etc. He is further required to demonstrate his knowledge by drawings and written descriptions of the specimens. The course includes the study of the most important alterations in the blood and circulatory system, changes in nutrition, tumors, the infectious diseases, and the more important diseases of special organs. About one hundred and seventy-five specimens, stained and ready for mounting,

are given to the class as unknowns for identification and demonstration. These become the property of the student. The study of inflammation is also made in the living animal.

Written reports upon each of these specimens are required, and, in addition, fifty drawings. Small prizes are offered yearly for the best two sets of drawings; for this year fifteen dollars and five dollars.

A practical working knowledge of pathologic technique is also required of each student; and he is instructed in the methods of examination of fresh tissues; in the various processes of hardening, embedding, cutting, etc.; and in the use of the most important stains.

A special course in technique and in the diagnosis of malignancy is offered to junior students who have finished the regular course. Reagents and apparatus are furnished by the laboratory, and separate rooms are set apart for the use of the advanced student. The abundance of valuable material available for this course offers unusual opportunities to the physician who may wish to take special work. To such and to those who wish to work up material of their own every facility is offered. The members of this advanced class form a Journal Club which meets weekly. At these meetings reports are made in detail on material given the student for examination, papers are read, specimens exhibited, and general discussions held.

An advanced laboratory class for senior students is held on Saturday mornings. This course is limited to the special study of the blood, genito-urinary tract, eye, etc. An opportunity is given each student for work in any special line he may choose for original investigation.

The laboratory contains a set of pathological models and a nucleus of a pathological museum which already contains many rare and valuable specimens. These are utilized for teaching purposes as far as possible.

Autopsies.—A senior course in post-mortem work is given one hour weekly throughout the year. The most important methods of making sections are demonstrated upon the cadaver, and are repeated until the student is thoroughly familiar with them. Especial attention is paid to the gross appearance of both normal and pathologic conditions of the body.

The clinical autopsies are held before the members of the senior and junior classes, and the findings thoroughly demonstrated. No regular time can be set for this work, but in the event of a post-mortem the students are excused from other work in hand, so that they may be present at the section. The number of these autopsies has greatly increased within the last few years, and the cases shown have been most instructive ones.

HYGIENIC LABORATORY.

The hygienic laboratory has a large room devoted to bacteriological work, containing all of the improved apparatus employed in the best laboratories of France and Germany. The courses in bacteriology extends through three months and requires four hours daily in the laboratory for this time. All the known pathogenic and the most important non-pathogenic germs are studied. The microscopes used are those of Zeiss and Leitz. All animals needed for experimentation are supplied by the laboratory. There are also courses in the chemical and bacteriological examination of drinking water, and in the study of food adulterations. Besides these, advanced students who wish to do practical work in the study of ptomaines and leucomaines are accommodated.

The objects had in view in the establishment of this laboratory were as follows: (1) original research as to the causation of disease; (2) sanitary examination of food and drink; (3) instruction to students.

Besides the large bacteriological room, there are rooms fitted especially for gas analysis and water analysis, and private rooms for original research. There are also a cold chamber, a disinfecting chamber, and an animal room.

MUSEUM OF NATURAL HISTORY AND LIBRARY.

Students in medicine have access to the botanical, zoological, and geological cabinets of the University, estimated to contain 255,000 specimens. The Medical Library contains 9,614 volumes, exclusive of pamphlets and also exclusive of about 7000 volumes treating of chemistry, pharmacy, and allied subjects of importance to medical students, included in the General Library, which contains, in all, 105,279 volumes, and is open to all students. A complete catalogue, arranged both by authors and by subjects, is accessible to readers. The leading medical periodicals of this country and of Europe are taken and kept on file.

THE UNIVERSITY HOSPITAL.

The University Hospital has sufficient capacity to accommodate a large number of patients, is thoroughly equipped, and is in the immediate charge of competent house physicians and surgeons and an experienced matron. It is under the direction of the Faculty, who attend regularly upon the patients (each upon such cases as may come within his special department) and give clinical instruction in the wards to senior students. In connection with the hospital there is a spacious clinical amphitheatre where clinics are regularly held every day during the college year, for medical, surgical, gynaecological, ophthalmological, neurological, derma-

tological, and venereal cases, at which time examinations are made, prescriptions given, and surgical operations performed in the presence of the class.

It is the aim of the Faculty to make instruction in clinical medicine systematic and thorough, and this they are enabled to do by an abundance of interesting cases which present themselves. The number of patients treated and operated upon in the hospital each year is more than 2,000. Each student, therefore, may see, during his two clinical years, more than 4,000 patients, many of whom present more than one abnormality. Patients are utilized for teaching purposes more thoroughly than can be done in many hospitals. The University Hospital exists for the purpose of affording clinical material and every patient is utilized, but this does not detract in any manner from the benefit which the patient may receive. Students are required to take the history and keep a record of patients, and, under proper supervision, are afforded an opportunity of personally examining the patients. Senior students are required to dress wounds and give other detailed attention to patients assigned them. Stress is laid upon the value of ward and bedside instruction. A small room in the hospital is furnished with laboratory appliances and here the student is required to make practical application of the knowledge which he has previously acquired in the scientific laboratories.

A lying-in ward is established in which senior students are given an opportunity to attend cases of labor, and become familiar with the duties of the lying-in room, under the immediate direction of the professor of obstetrics and his assistant.

For the treatment of diseases of the nervous system the hospital is furnished with apparatus for generating all kinds of electric currents. Attendants especially skilled in the application of electricity and massage are put in charge of such cases.

A large portion of the cases admitted to the hospital are from a distance and are of more than common interest, including many cases of chronic diseases of the lungs, the heart, and the nervous system.

Under the present organization, patients are much better accommodated, and clinical instruction is rendered more systematic and efficient than was formally possible. The expenses to patients are only for their board, for unusual appliances or special nursing, and for medicines, the services of the Faculty being rendered gratuitously to those made available for clinical instruction.

Patients who desire to enter the hospital are requested to write to Mr. Harry W. Clark, Superintendent of the University Hospital, Ann Arbor, Mich., to ascertain if there is room for their accommodation, and to obtain a circular giving more fully the rules governing admission. No contagious diseases are admitted.

Training School for Nurses.—In connection with the Hospital there has been established a training school for nurses under the charge of a competent and experienced matron. The term of study and service extends through two years, at the expiration of which time those who have proved themselves worthy are granted a certificate of graduation. For further information in regard to this school, application may be made to the Superintendent of the Hospital.

TEXT-BOOKS AND BOOKS OF REFERENCE.

A list of text-books and books of reference recommended is given in the special Announcement of the Department. The student who begins a course of reading without an instructor, is recommended to devote the most of his time for the first year to the elementary branches, anatomy, physiology, and general and medical chemistry.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Laboratory and Demonstration Courses.—The required laboratory and demonstration courses cost approximately as follows:

Anatomy.....	\$20 00
Chemistry.....	15 00
Bacteriology.....	15 00
Physiological Chemistry.....	15 00
Histology.....	7 00
Electrotherapeutics.....	8 00
Pathology.....	10 00
Operative Surgery.....	10 00
Demonstration Course in Medicine.....	10 00
“ “ “ Obstetrics.....	10 00
“ “ “ Nervous Diseases.....	10 00
“ “ “ Laryngology and Ophthalmology...	10 00

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student can select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

A deposit of the amount indicated for each of the above is required before the work of the course is begun.

Graduate Courses.—A fee of *ten dollars* is charged to graduate students for each course taken, in addition to the ordinary laboratory expenses of the course.

The total amount of fees paid to the University during the whole four years' course, for matriculation, incidental expenses, materials used, and diploma, is, for Michigan students, about \$300.00; and for all others, about \$355.00, varying a little with the student's actual laboratory expenses.

For additional information in regard to expenses see pages 40 to 42.

Department of Law.

A special Announcement giving further information in regard to this Department is published annually. For copies of this Announcement, or for other information relating to the Department, address Professor H. B. Hutchins, Dean of the Department of Law, Ann Arbor, Michigan.

THE Department of Law was opened in 1859. Its growth and influence have been marked. From the first it has been the constant endeavor of the Faculty to furnish facilities for legal training equal to any attainable elsewhere in the country. And no effort will be spared to make the Department in the future deserving of continued and increasing prosperity. The faculty is composed of both resident and non-resident members. The resident members, thirteen in number, devote themselves regularly and continuously to the work of instruction. The non-resident members, two in number, are engaged in practice, but meet their classes each week on designated days. In addition to the instruction by the regular staff, which covers all the fundamental and ordinary branches of the law, provision is made for several courses by specialists upon such subjects as International Law, Roman Law, Comparative Constitutional Law, Constitutional History, Admiralty Law, Medical Jurisprudence, Insurance, Mining Law, Patent Law, Copyright Law, Statute Law, Neurology, Electrology, and Railway Injuries. There are twelve special lecturers, and each of the special courses consists of from six to fifteen lectures.

The department is housed in a new and spacious building

that is devoted exclusively to its use. It is ample in its accommodations and admirably adapted for law-school work.

The academic year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901).

DIRECTIONS TO APPLICANTS FOR ADMISSION.

Before applying for admission to the Department, or to the entrance examination, the applicant is required to present to the Dean of the Department, at his office in the Department Building, the Treasurer's receipt for payment of the matriculation fee and the annual fee. It is essential, therefore, that an applicant for admission should apply first to the Secretary of the University at his office in University Hall, register his name as a student in the Department of Law, and pay his fees to the Treasurer. He is then entitled to apply for admission, and in case of rejection, the money paid preliminary to the examination will be refunded by the Treasurer.

REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 189.]

[For admission of special students, see page 190.]

[For admission to the graduate class, see page 190.]

The requirements for admission to the Department of Law have recently been raised, and the additional requirements go into effect at the opening of the University year in 1900. The requirements are as follows:

Applicants for admission to the first year class must be at least eighteen years of age; to the second year class, nineteen; and to the third year class, twenty. Applicants for admission to the graduate class must be at least twenty years of age. Special students must be at least nineteen years of age.

Graduates of universities or colleges, matriculates of universities or colleges, and students who have completed an academical or high school course approved by the Faculty, are admitted to the Department without examination as to preliminary requirements, and may become candidates for a degree. In order to be entitled to this privilege, however, the applicant should present to the Dean of the Department evidence that he

comes within some one of the classes named, which should be in the form of a diploma or certificate, or a certified copy thereof.

All other applicants, if candidates for a degree, must pass satisfactory examinations in the following subjects:*

Geography.—The chief facts of political geography.

English Grammar.—Selections for analysis and parsing will be set, arranged to test the applicant's knowledge of the leading facts of English Grammar.

Composition and Rhetoric.—The applicant will be required to write an essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing. The topics for the essays, which will be such as the applicant is likely to be familiar with and from which he may make a selection, will be given at the time of the examination.

English Literature.—Stopford A. Brooke's Primer, or any other manual, may be used for an outline of the subject.

Foreign Language.—The requirement in foreign language may be satisfied by two years of study in any foreign language, or by one year in each of any two foreign languages. *In 1893, and thereafter, a year of Latin must be offered as a part of the language requirement.*

Mathematics.—*Algebra*—Through Quadratic Equations.

Plane Geometry.—As given in Olney's New Elementary Geometry, Beman and Smith's Plane and Solid Geometry, or an equivalent in other authors.

History.—The requirement in history may be met by the study of (1) Myers's General History, or an equivalent; (2) McLaughlin's History of the American Nation, Johnston's History of the United States, or an equivalent work on this branch of the subject; and (3) Ransome's History of England, Gardiner's Students' History of England, or any equivalent work.

Civil Government.—Fiske's Civil Government, Hinsdale's American Government (Parts I and II, especially the large print), or an equivalent.

Sciences.—Any two of the following sciences as ordinarily studied in a high school having a course of four years: *Physics, Botany, Chemistry, Physical Geography, Philosophy, Astronomy, Geology.*

*The requirements here enumerated are substantially the same as those of *Group IV* of the requirements for admission to the Department of Literature, Science, and the Arts; but if the applicant desires to do so, he may present the subjects named in *any one* of the four groups of requirements for admission to that department (see pages 44 to 51).

While specific requirements are here enumerated, it should be understood that an applicant will be received as a candidate for a degree who passes a satisfactory examination in subjects equivalent to a high school course of four years, even though some of the subjects may not be contained in the enumeration here given.

Prior reading in Law.

The student is frequently solicitous as to whether or not it is desirable for him to acquire some general knowledge of legal principles before beginning his course in a school of law. It is difficult to lay down directions upon the subject that can be applied in all cases. The Faculty, however, is of the opinion that, for the first year at least, more positive advancement will be made by students who, before entering the Department, have read some of the more elementary works. But the Faculty understands very well the difficulty that most students, not in a law school, experience in giving proper direction to their reading at the beginning; and therefore, does not make the prior reading of law a condition of admission to the first-year class.

ADMISSION TO ADVANCED STANDING.

Applicants for admission to the second-year class must be at least nineteen years of age, and to the third-year class, twenty.

In September, 1900, the following classes of persons, if otherwise qualified, will be admitted to advanced standing without examination upon their previous legal study:

1. To the second-year class:—*a.* Attorneys-at-law in good and regular standing from any State in which an examination for admission is required. *b.* Persons who have satisfactorily completed one year's work in another law school of approved standing, and who bring proper certificates thereof.*

2. To the third-year class:—*a.* Persons who have received, in due course, the degree of Bachelor of Laws from an approved law school, maintaining an undergraduate course of not less than two years of nine months each.* *b.* Persons who have satisfactorily completed two years' work in any approved law school maintaining an undergraduate course of three years of nine months each, and who bring the proper certificates thereof.* *c.* Persons who, since January 1, 1898, have creditably passed the examination for admission to the bar given by the State Board of Law Examiners of Michigan, and who furnish proper certificates thereof.

All other applicants for advanced standing in the undergraduate course will be received only upon examination. Before he can enter the examination, the applicant must, unless exempt, pass the required preliminary examination for admission to the Department. He must, also, if he seeks admission to the second-year class, show that he has studied law at least fifteen months, and if to the third-year class, at least two years and a half, under some reputable practitioner or instructor. The evidence that he has complied with these requirements should be in the

* In 1901, and thereafter, students from other law schools will be given advanced standing only on examination.

form of an affidavit from the practitioner or instructor with whom he has studied, showing with particularity the time spent and the course of study pursued, and should be presented to the Dean of the Department. The applicant must then pass examinations upon the subjects in the course that have been taken by the class to which he seeks to enter, or their equivalent. Under this regulation, he will be allowed to select the subjects for examination, but they must be the equivalent of those that have been taken by the class. He will receive credit for the subjects passed, and the examination will be final as to such subjects.

Candidates for advanced standing must make their application therefor at the time of entering the Department, and no application for further advancement will be entertained unless made within four weeks after the applicant's admission to the Department.

ADMISSION TO THE GRADUATE CLASS.

Applicants for admission to the graduate class must be at least twenty years of age.

Until further notice, the graduate course will be open to those who have received the degree of Bachelor of Laws from an approved law school, maintaining an undergraduate course of not less than three years of nine months each.

ADMISSION OF SPECIAL STUDENTS.

Persons who have been reading law for a considerable period before making application for admission to the Department, but whose reading, or preliminary preparation, has not been sufficiently extensive to bring them within the rules for admission to any class, are allowed to become special students, with the privilege of pursuing a selected course of study, but without the privilege of being enrolled as candidates for a degree. They are permitted, under the guidance of the Faculty, to select subjects from the different courses. They must, however, satisfy the professors giving instruction in the subjects selected, that they are qualified to pursue the work with profit to themselves.

A like privilege is extended to persons who have not read law before applying for admission, and whose preliminary preparation is not such as to entitle them to enter as candidates for a degree.

TIME OF EXAMINATION.

The examination for admission will be held on Friday, Saturday, and Monday, September 21, 22, and 24, 1900. The examinations on the first of these days will have reference to general education. The examinations on the other days will have reference to legal education, and will be confined to candidates for advanced standing. Applicants for advanced standing, unless exempt from the preliminary requirements,

should be present at both of these examinations. Candidates are required to present themselves on these days, as they are expected to be in attendance on the first day of the term, at which time the regular course of instruction will begin. To provide for cases in which it is absolutely impossible for the candidate to be present at this time, supplementary examinations will be held at such times as may be determined upon by the Faculty, but no excuse, except of an urgent character, will be accepted for failure to appear at the first examination.

COURSE OF INSTRUCTION.

The course of instruction for undergraduates is a graded course extending through three academic years of nine months each. The subjects upon which instruction is given, the time devoted to each subject, and the method used, are described below. A schedule showing the hours when different exercises are held, is published and distributed at the opening of each semester.

FIRST YEAR.

The first-year student, has in lecture and text-book work, twelve hours a week during the first semester and thirteen during the second. In addition to this, he has quiz work with instructors amounting to at least two hours a week.

Elementary Law. Two hours a week for the first semester. Text-book work accompanied by oral exposition. Class divided into two sections. Professor WILGUS.

Elementary Real Property. Two hours a week for the second semester. Text-book work accompanied by oral exposition. Class divided into two sections. Professor HUTCHINS.

Contracts and Quasi-Contracts. Two hours a week for the first semester and three for the second. Text-book and cases accompanied by oral exposition. Class divided into two sections. Professor KNOWLTON.

Criminal Law and Procedure. Two hours a week for the year. *First Semester:* Lectures on Criminal Law. Professor KNOWLTON. *Second Semester:* Text-Book on Criminal Pleading and Procedure. Class divided into two sections. Professor E. F. JOHNSON.

Torts. Two hours a week for the year. *First Semester:* Text-book and cases. Class divided into two sections. Professor WILGUS. *Second Semester:* Lectures. Professor THOMPSON.

Domestic Relations. Two hours a week for the second semester. Lectures. Professor MCALVAY.

Husband and Wife. Two hours a week for the first semester. Lectures. Professor KIRCHNER.

Personal Property, Including Sales. Two hours a week for the first semester. Text-book and cases accompanied by oral exposition. Professor LANE.

Agency. Two hours a week for the second semester. Lectures and cases. Professor MECHEM.

SECOND YEAR.

The second-year student has, in lecture and text-book work, twelve hours a week during the first semester and fourteen during the second semester. In addition to this, he has quiz work with instructors, amounting to at least two hours a week.

Partnership. Two hours a week for the first semester. Lectures and cases. Professor MECHEM.

Damages. Two hours a week for the second semester. Cases. Class divided into two sections. Professor MECHEM.

Bills of Exchange and Promissory Notes. Two hours a week for the first semester. Text-book and cases accompanied by oral exposition. Class divided into two sections. Professor E. F. JOHNSON.

Bailments and Carriers. Two hours a week for the first semester. Lectures. Professor LANE.

Civil Pleading and Procedure at Common Law. Two hours a week for the first semester. Text-book. Class divided into two sections. Professor BOGLE.

Code Pleading. Two hours a week for the second semester. Text-book. Class divided into two sections. Professor E. F. JOHNSON.

Real Property: Including Fixtures, Easements, and Landlord and Tenant. Two hours a week for the year. Lectures. Professor THOMPSON.

Equity Jurisprudence. Two hours a week for the first semester. Text-book, lectures, and cases. Professor HUTCHINS.

Equity Pleading and Procedure. Two hours a week for the second semester. Lectures. Professor THOMPSON.

Private Corporations. Three hours a week for the second semester. Text-book and cases. Class divided into two sections. Professor WILGUS.

Evidence. Two hours a week for the second semester. Text-book accompanied by oral exposition. Class divided into two sections. Professor LANE.

The Peculiar Jurisdiction and Practice of the Federal Courts. One hour a week for the second semester. Lectures. Professor LANE.

THIRD YEAR.

The third-year student has, in lecture and text-book work, thirteen hours a week. He has in addition the three electives and at least two

hours of quiz work with instructors, as well as the practical work in the Practice Court and Conveyancing.

Constitutional Law. Two hours a week for the first semester. Text-book and cases. Professor MECHEM.

Public Corporations. Two hours a week for the second semester. Lectures. Professor KNOWLTON.

Extraordinary Legal Remedies. One hour a week for the second semester. Text-book and cases accompanied by oral exposition. Class divided into two sections. Professor LANE.

Equity Jurisprudence. Two hours a week for the first semester and one for the second. Lectures and cases. Professor HUTCHINS.

Wills and Administration. Two hours a week for the second semester. Lectures and cases. Professor MCALVAY.

Private International Law. Two hours a week for the first semester. Lectures. Professor KIRCHNER.

Conveyancing. Two hours a week for the year. Lectures and practical work. Professor BREWSTER.

Assignment for the Benefit of Creditors and Fraudulent Conveyances. One hour a week for the second semester. Lectures. Professor THOMPSON.

Suretyship and Mortgage. Two hours a week for the first semester. Lectures. Professor THOMPSON.

The Science of Jurisprudence. One hour a week for the second semester. Text-book accompanied by oral exposition. Professor MECHEM.

Practice Court. One hour a week for the year. Class divided into groups of four. Professor BOGLE.

Public Officers. One hour a week for the first semester. Text-book. Professor MECHEM.

Taxation. One hour a week for the second semester. Text-book. Professor MECHEM.

Practical Instruction Concerning the Preparation, Trial, and Argument of Causes. Lectures. One hour a week for the first semester. Professor LANE.

Execution, Attachment, and Garnishment. One hour a week for the second semester. Cases. Class divided into two sections. Mr. ROOD.

In addition to the above, each member of the third-year class must elect and complete *three* of the following subjects:

Admiralty Law. Lectures. Judge SWAN.

Medical Jurisprudence. Text-book and lectures. Professor E. F. JOHNSON.

Insurance. Lectures. Dr. M. M. BIGELOW.

Mining Law. Lectures. Mr. CLAYBERG.

Patent Law. Lectures. Mr. WALKER.

Copyright Law and Trademarks. Lectures. Mr. REED.

Railway Law. Lectures. Professor KNOWLTON.

Statute Law. Lectures. Mr. BOUDEMAN.

Neurology, Electrology, and Railway Injuries. Lectures. Professor HERDMAN.

RECITATIONS AND EXAMINATIONS.

For all text-book work, each class is divided into at least two sections. Whenever a subject is taught by lecture, the professor giving the instruction holds frequent, and usually daily, examinations upon ground covered by previous lectures. Additional quiz work upon the lectures is also given by the instructors. For this purpose the classes are divided into sections, composed of twenty to thirty students, who are required to recite upon the lectures after the manner adopted in text-book instruction. Each section meets an instructor weekly for at least two exercises of one hour each.

At the end of each semester one week is set apart for the thorough examination of all students upon the work of the semester. The examinations are in writing, and are final as to the work of the semester. The promotion of a student to full standing in his class at a subsequent semester and his continuance in the Department are dependent upon the manner in which he passes such examinations. The Faculty does not hesitate to drop a student from the rolls at any time during the year, when satisfied that he is neglecting his work and not conforming to the requirements of the Department.

THE PRACTICE COURT.

It has been an objection frequently urged against the completeness of the training given in law schools that the student acquires no knowledge of actual practice. This objection has been largely removed by the introduction of the Practice Court. The Practice Court is a part of the Department and is presided over by the Professor of Practice, who gives his entire time to this work, while other members of the Faculty cooperate in conducting it. Its work is divided into three parts, that of the law term, that of the jury term, and that of appellate jurisdiction. The court is provided with a full corps of officers including the member of the Faculty who may sit from time to time as presiding judge, the full bench of judges sitting as a Supreme Court, a clerk, a sheriff, and the necessary deputies. Ample and commodious rooms have been provided for the use of the court, including a large court room fitted up with all of the furniture and fittings necessary for the trial of jury cases, jury rooms, and clerk's office. The latter is provided with all the books and records used in actual practice and a full supply of the blanks in common use in the several states.

The purpose of the court is to afford to the student practical instruction in pleading and practice both at law and in equity, under the common law system and the "code" or "reform" procedure, and actual experience in the commencement and trial of cases through all their stages. In commencing the actions, the students assigned to the case are permitted to select the state in which the action shall be supposed to be brought, thus enabling the student to acquire the practice as prevailing in his own state. All questions of practice, pleading, and procedure are governed by the law of the state in which the action is so laid, but questions of substantive law are determined according to the weight of authority.

Two classes of cases are presented:

First. Cases arising upon given statements of fact, prepared and assigned by the Professor of Practice, upon which process is to be issued, pleadings framed, and the case conducted to an issue, when it is argued and disposed of as a question of law upon the facts admitted. This class of cases affords the student practical experience in the commencement of suits, and the preparation of pleadings and the arguments of the questions of law arising upon the facts. The practice and pleadings are under the common law or the code procedure as the students may elect. There are two public hearings in this course: *a.* The questions arising upon the pleadings are urged and disposed of at a regular session of the court presided over by the Professor of Practice. *b.* After the pleadings have been approved, the case is set down for a separate hearing upon the questions of law. This argument is heard either by the Professor of Practice or that member of the Faculty who has charge of the instruction in the subject involved. When the issues so arising have been satisfactorily disposed of, the student is given credit for the first course.

Second. Actual controversies are arranged and assigned for trial as issues of fact. The course includes the entire conduct of an actual case from its beginning to a final judgment in the Supreme Court. This involves the issue of proper process, the preparation and filing of appropriate pleadings, the subpoenaing of the witnesses, the impanelling of a jury, the examination and cross-examination of witnesses, the arguments to the court and jury, and all the other incidents of a contested trial.

For the purpose of this work the class is divided into sections, and the work of attorneys, witnesses, jurors and the like is performed by the students. A member of the Faculty presides at these trials, and they are conducted with all the dignity and decorum of actual practice. Upon the satisfactory completion of the course, credit is given for it.

Every member of the senior class who is a candidate for a degree will

be expected to take part in both courses, and to perform all the incidental duties which may be required of him. Satisfactory completion of both courses will be a condition precedent to a degree.

The Practice Court supersedes the Moot Courts formerly conducted in the Department.

CONVEYANCING.

In order further to extend the practical instruction given in this Department, a course in conveyancing is provided, to which one professor devotes his entire time. It is the purpose of this course to give by textbooks and lectures full and systematic instruction in the substantive law of conveyancing, and also a thorough drill in the actual preparation of all of the more important forms of conveyances, including thereunder not only deeds, mortgages, wills, and assignments of various sorts, but also all such contracts, agreements, corporate and partnership articles, and other instruments, as the lawyer in actual practice is likely to be called upon to prepare. To accomplish this purpose, the class is furnished with statements of fact, with the requisition for the appropriate conveyance, and each student is required to prepare under the direction of the professor in charge of this course, the various forms of instruments in question, and to submit them to such professor for examination and criticism. If not in proper form they are required to be rewritten or corrected. Neatness, accuracy, and a lawyer-like method of expression are insisted upon. The correctness of the body of the instrument is not alone attended to, but the variations of form in the execution and acknowledgment where one of the parties is a corporation, a partnership, a married woman, and the like, receive attention.

The work in this course must be satisfactorily completed by each member of the third-year class.

THE STUDY OF CASES.

As much benefit can be derived from a proper study of selected cases, the members of all classes are assigned cases by the professors, and in several of the courses volumes of selected cases are used as the basis of the work.

ELOCUTION AND ORATORY.

It is important that those who study law with a view of becoming advocates should give attention to the subject of public speaking. It is a mistake to suppose that excellence in speaking is simply a gift of nature, and not the result of patient and persistent labor and study.

Information regarding the University Oratorical Association, the Northern Oratorical League, the Central Debating League, the Testimonials, and the annual contests in oratory and debate, which afford

opportunity for a practical application of the principles taught, may be found on pages 37 to 39.

The following courses, given by Professor TRUEBLOOD, are optional: but, when a student has elected a course, he is required to complete it. Failure to do so will affect his standing at graduation.

FIRST YEAR CLASS.

First Semester.

1. *Elocution.* Exercise in vocal culture, breathing, position, and gesture; pronunciation and emphasis; elements of quality and force of voice, with their application to choice passages from the orators. Two sections. Two hours a week.

Second Semester.

2. *Elocution.* Exercises in vocal culture, continued; principles of action. elements of pitch and time, and their application to representative selections. Two sections. Two hours a week.

SECOND YEAR CLASS.

First Semester.

3. *Study of Forensic Orators and Oratory.* Lectures on methods of public address and sources of power of the orator; study of representative orations. Two hours a week.

Second Semester.

Oral Discussions. Designed to develop readiness of extemporization. Practical application of the principles of formal logic. Leading questions of the day debated in class. Lectures on argumentation and persuasion. Two hours a week.

THE GRADUATE COURSE.

In October, 1889, the Board of Regents established in the Department of Law a Graduate Course, upon the completion of which the degree of Master of Laws is conferred. The requirements for admission to this course are given on page 190.

The following course of study is pursued by candidates for the degree of Master of Laws:

Public International Law. Theses are required on topics assigned. President ANGELL.

History of Treaties. President ANGELL.

The Railroad Problem. Professor ADAMS.

Comparative Constitutional Law. Lectures on the institutions of Germany, France, and other continental states, with a study of works on the English Constitution. Professor HUDSON.

Advanced Course in Constitutional Law and Constitutional History. Professor McLAUGHLIN.

Roman Law. Assistant Professor DRAKE.

Students recite and are examined on the subjects enumerated above.

The members of the undergraduate classes are not allowed to attend the lectures given to the graduate students. Graduate students are, however, allowed to attend the lectures given to the undergraduate classes.

In addition to the foregoing subjects, each graduate student is required to elect at the opening of the university year *three* of the subjects herein-after named, one of which he shall designate as his *major* subject, and the other two as his *minor* subjects. To the *major* subject the student must give his best energies, making his investigations therein thorough, comprehensive, and exhaustive. To the *minor* subjects, he will be expected to give all the attention which his time will permit. His work in the *minor* lines will be of a more general character, and, although it must be thorough as far as prosecuted, it will be less extended than that given to the *major* subject.

Each graduate student is under the special guidance of the professors in whose departments his subjects lie. From them he receives instructions as to the questions to be investigated, and to them he makes regular weekly reports. Upon the return of these reports, the work of the student is carefully examined and criticised, and such suggestions made as may be thought necessary. The scheme contemplates independent investigation by the student, along the lines chosen, under the direction and supervision of the Faculty.

All of the special courses given by the non-resident lecturers are open to graduate students and they are required to take such of them as they did not take as undergraduates.

Each graduate student is required to prepare a thesis, which must be scholarly and exhaustive in character, upon some topic connected with his *major* subject. The thesis is made a special feature of the graduate work.

The graduate course covers one year. At the end of each semester each student is examined both orally and in writing upon all work taken.

The following subjects are offered from which the student may select his *major* and *minor* subjects: Contracts; Torts; Mercantile Law; Public and Private Corporations; Railroad Law; Insurance Law; Private International Law; Real Property; Jurisdiction and Procedure in Equity; Domestic Relations; Taxation; Elections; Public Officers; Admiralty;

Roman Law; American Constitutional History; American Constitutional Law; English Constitutional History; Comparative Jurisprudence; Political Science.

REQUIREMENTS FOR GRADUATION.

THESIS.

Each candidate for a degree is required to prepare and present a thesis not less than four thousand words in length, upon some legal topic selected or approved by the Committee on Theses.* The thesis must be satisfactory in matter, form, and style; must be neatly and accurately typewritten; and must be filed with the Committee *on or before the fifteenth of March of the year in which the degree is to be taken.*

THE DEGREE OF BACHELOR OF LAWS.

Students who have received the full course of instruction, performed all required exercises, and passed the regular examinations, are admitted to the degree of Bachelor of Laws. Students admitted to advanced standing are entitled to all the privileges of the class of which they become members.

THE DEGREE OF MASTER OF LAWS.

The degree of Master of Laws is conferred on any graduate of this Department, who pursues the study of Law in this University for one year after graduation, and who completes to the satisfaction of the Law Faculty the Graduate Course above described (page 197); and the privilege thus extended to graduates of this Department is also extended to the graduates of other law schools who are entitled under the foregoing rules to advanced standing as members of the graduate class.

CERTIFICATES OF ATTENDANCE.

When a person has been connected with the school for a period not entitling him to graduate, he may, on application to the Dean of the Department, receive an official certificate of attendance, which states the time of his attendance and the degree of his attainment.

LIBRARIES.

The Law Library contains the reports of every State in the Union, the reports of the Federal Courts, the English, Scotch, Irish, and Cana-

*The Committee on Theses for the current year consists of Professors MECHAM, WILGUS, and LANE.

dian reports, together with such collateral reports as the Law Journal Reports, the Jurist, the Law Times Reports, the Weekly Reporter, the Scottish Law Reporter, the Irish Jurist, the Irish Law Times, the English Ruling Cases, the National Reporter System, the American Decisions, the American Reports, the American State Reports, and the Lawyer's Reports Annotated, as well as several series of cases upon particular branches, such as the American Probate Reports, the American Electrical Cases, the American and English Railroad Cases, the American and English Corporation Cases, etc. Of several of the more important series one or more duplicates are to be found in the library. It also contains an extensive collection of treatises and text-books, both English and American, and copies of the statutes of the several States and of the United States. New reports, as they are issued, are added, as are new text-books and treatises of merit. The library is also well supplied with sets of selected and leading cases and of legal periodicals. The Journal of Jurisprudence (Edinburg), the Law Quarterly Review (London), the American Law Review, the American Law Register, the Criminal Law Magazine, the Albany Law Journal, the Central Journal, the Judicial Review, the Green Bag, and others, are regularly taken and kept on file.

The library was enriched some years ago by the gift of the valuable law library of the Honorable Richard Fletcher, formerly one of the Justices of the Supreme Court of Massachusetts; and, more recently, by the gift of the valuable law library of Honorable Samuel T. Douglass, for many years one of the leading lawyers of the State and formerly one of the Justices of the Supreme Court of Michigan.

The Honorable Christian H. Buhl, of Detroit, bequeathed to the University for the Law Library the sum of ten thousand dollars. This gift, which has been used in the purchase of books has added materially to the value and efficiency of the large collection of reports and text-books presented to the library by Mr. Buhl a few years ago, and known as the Buhl Law Library. It has enabled the Department to provide for its students library facilities that are second to none in the country.

The library is open for consultation by students from 8 A. M. to 12 M., from 1:30 to 5:30 P. M., and from 7 to 10 P. M., during the academic year, except on Saturday afternoons and evenings. Students are not permitted to take the books from the library building, but during the hours named are allowed free access to them.

The General Library of the University (see page 24) is also open to use by students in the Department of Law.

WORK IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

CONSTITUTIONAL HISTORY AND POLITICAL SCIENCE.

It seems now to be conceded that the law should be studied in a law school, and that the law school should be connected with a university, where students can avail themselves of opportunities for the study of such other branches of learning as are of allied significance.

It is believed that students in the Department of Law may derive great benefit from the instruction given on kindred subjects in the Department of Literature, Science, and the Arts (page 43). Students who first obtain permission from the committee in charge of the combined work in the two departments (see below), are allowed to attend lectures delivered in that department free of charge. But the Law Faculty reserves the right to require such students to give up any or all studies they may be pursuing in the other department, whenever it appears that the pursuit of these studies is attended with an unsatisfactory performance of the duties required in the Department of Law. Among the subjects regarded as particularly suitable for law students the following may be named: Political and Constitutional History of England; Constitutional History and Constitutional Law of the United States; Comparative Constitutional Law; History of the Middle Ages; Elements of International Law; History of Treaties; the Social, Sanitary, and Economic Sciences. (Compare pages 74 to 85.)

COMBINED COURSE IN COLLEGIATE AND LAW STUDIES.

Under an arrangement entered into by the Faculties of the two departments it is now possible for a student to carry on, to some extent and under certain conditions, collegiate studies and studies in law at the same time. The work of students who receive permission to enter upon the combined course is under the supervision of a joint special committee, consisting for the current year of Professors MCLAUGHLIN, HUTCHINS, MECHEM, TAYLOR, and LLOYD.

A fuller description of the combined course may be found on pages 110 and 111.

MASTER'S DEGREE IN ARTS, PHILOSOPHY, SCIENCE, OR LETTERS.

A graduate of the Department of Literature, Science, and the Arts, who is a candidate for a degree in the Department of Law, may, by permission of the Faculties of the two departments, be enrolled at the same time in the Graduate School, as a candidate for a Master's degree (compare page 126). The privilege thus extended to graduates of this

University is also extended to graduates of other colleges who satisfy the Faculty of the Department of Literature, Science, and the Arts, that the courses of study for which they obtained their first degree are equivalent to the courses of study required for the corresponding degree at this University.

Useful and desirable opportunities are thus afforded to college graduates who wish to study law and at the same time to supplement their professional studies with a broader knowledge of other branches that will be helpful to them in their professional work.

It is understood, however, that, if their work in the Department of Law is not satisfactory, the Law Faculty will require students of law to discontinue their studies for the Master's degree.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

For additional information in regard to expenses see pages 40 to 42.

SUMMER SCHOOL OF LAW.†

For the summer of 1900, beginning June 25th and continuing for eight weeks, members of the Faculty of the Department of Law, will offer courses of instruction as described below. The work will consist of a thorough review of the leading topics of the law, designed especially to aid those who desire to review work already done for the purpose of preparing themselves to take examinations for admission to the bar, or who wish to secure advanced standing in the regular course of this or other law schools, or who wish to make up back work.

While this review is the primary object of the instruction, many topics will be treated in such a way as to make them desirable for those who wish a knowledge of certain subjects of the law as a part of a liberal

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student is allowed to select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

†A special Announcement, giving the dates at which the several courses are to be given and other particulars, will be sent upon application to Professor E. F. Johnson, Secretary of the Law Faculty.

education. For such persons the courses in Elementary Law, Contracts, Torts, Bills and Notes, Domestic Relations, Personal Property and Sales, Corporations, and Common Carriers, are particularly recommended.

The first eight subjects in the schedule given below are those usually found in the first year of regular three-year law courses, while the remainder comprises the leading subjects of the second year. The courses designated are, therefore, divided into two classes—one of first-year subjects, and one of second-year subjects—of about 120 hours each, or three hours a day for each class during the eight weeks. These classes are arranged so there is no conflict of subjects, and students can elect such subjects as they desire without limitation, except that no one is permitted to take more than twenty hours a week without special permission of the Faculty.

The work will consist of daily lectures, and recitations from text-books.

ADMISSION.

While no examination for admission is held, it is desired and expected that each applicant will present some evidence showing that he can pursue the work to his advantage, and such as will enable the Faculty to give proper advice as to subjects to be selected, etc.

DIRECTIONS TO APPLICANTS FOR ADMISSION.

Each applicant for admission to the Summer School of Law should first apply to the Secretary of the Law Faculty, register with him as a student in the school, and arrange for the course or courses which he desires to take. He will then receive from the Secretary a ticket, indicating the course or courses selected and the amount of the fees, which ticket must be presented to the Treasurer of the University to whom the fees are to be paid. Upon presenting to the Secretary the Treasurer's receipt, showing that the required fees have been paid, the applicant is entitled to be enrolled as a member of the school.

COURSES OF STUDY.

During the summer of 1900, the following courses of study will be given:

Elementary Law.—Blackstone, Books I and III. Mr. FARRAH.

Elementary Real Property.—Blackstone's Commentaries, Book II. Mr. ROOD.

Contracts.—Anson on Contracts. Professor KNOWLTON.

Criminal Law.—Lectures and Text-book. Mr. DWYER.

Torts.—Cooley's Elements of Torts. Professor WILGUS.

Domestic Relations.—Lectures. Mr. FARRAH.

Personal Property.—Lectures. Professor LANE.

Common Law Pleading.—Perry's Common Law Pleading. Professor BOGLE.

Agency.—Lectures. Mr. DWYER.

Partnership.—Mechem's Elements. Mr. ROOD.

Common Carriers.—Lectures. Mr. DWYER.

Bills and Notes.—Johnson's Bills and Notes. Professor E. F. JOHNSON.

Real Property, Fixtures, etc.—Lectures. Professor THOMPSON.

Equity Jurisprudence.—Lectures. Mr. FARRAH.

Equity Pleading.—Thompson's Equity Pleading. Mr. DWYER.

Evidence.—Greenleaf, Vol. I. Mr. ROOD.

Corporations.—Lectures. Professor WILGUS.

FEES IN SUMMER SCHOOL.

The fee is \$35.00 for a course of 100 hours or over, subject to the limitation that no student is permitted to take more than twenty hours a week without special permission of the Faculty, and then only on the terms designated in each particular case. For the work in particular subjects the fees are \$4.00 for 10-hour subjects; \$6.00 for 15-hour subjects; and \$8.00 for 20-hour subjects. All fees are payable strictly in advance.

School of Pharmacy.

A special Announcement giving further information in regard to this School, and containing a register of residences and occupations of the alumni, is published annually. For copies of this Announcement, or for other information relating to the School, address Professor A. B. Stevens, Secretary of the Faculty, or the Dean of the School of Pharmacy, Ann Arbor, Michigan.

THE School of Pharmacy gives training for all branches of pharmacy and for various chemical pursuits. It provides a well-grounded preparation for services as a manufacturing chemist or as an analyst. The graduate is assured a thorough qualification for the prescription table, and for the most responsible positions in pharmacy. He is fitted to act as the chemist of the medical profession. In respect to the discipline of both the intellectual and the executive powers, the work of the School offers decided advantages, in the steady requirement of severe studies, and of exact operations, on the part of each student.

The school year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901). Students of the first year are released the second Friday before Commencement.

For the full regular work admission cannot be granted at any other time than at the opening of the first or the second semester (February 11, 1901), as students are instructed in classes in progressive order. For investigations, or special studies, students can be received at any time when there is room in the laboratories.

REQUIREMENTS FOR ADMISSION.

[For admission to advanced standing, see page 208.]

[For admission of students not candidates for a degree, see page 208.]

The requirements for admission vary in some particulars with the applicant's previous training in practical pharmacy, and with the course of study he intends to pursue. Two courses are offered: a two-year course, leading to the degree of Pharmaceutical Chemist: and a four-year course, leading to the degree of Bachelor of Science in Pharmacy. The requirements are described below in two divisions, according to the degree which the student desires to take.

All persons applying for admission are required to have a special form of recommendation properly filled out and signed. Blank forms for this purpose will be furnished on application to the Dean of the Department.

I. THE DEGREE OF PHARMACEUTICAL CHEMIST.

Applicants for admission to the two-year course, leading to the degree of Pharmaceutical Chemist, must be at least eighteen years of age.

It will be of advantage to the applicant if he can obtain at least a year of practical training in a drug store before entering the School. The required work leaves the student no time for an engagement in a drug store during the school year.

ADMISSION WITHOUT EXAMINATION.

From High Schools.—Applicants holding diplomas of graduation from any of the full courses of the schools approved by the Faculty of the Department of Literature, Science, and the Arts (compare page 54), are admitted without examination, as are, also, graduates of four-year courses of other high schools of good standing.

From Colleges.—Students who have completed at least one year's work in an approved college of literature and science, and who bring explicit and official certificates describing their course of study and scholarship and testifying to their good character, are admitted without examination. Graduates of colleges of medicine or of pharmacy are also admitted without examination.

ADMISSION ON EXAMINATION.

I. Applicants who bring evidence of *having been engaged in the practice of pharmacy* for at least two years are admitted on examination in the following branches:

English.—Exercises in the writing of English with correctness. Especial regard is paid to orthography, punctuation, the use of capitals, grammatical construction, and rhetorical fitness.

Mathematics.—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures.

Algebra.—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities.

Physics.—Carhart and Chute's Elements of Physics, or an equivalent.

Chemistry.—The requirement is intended to cover a year of school work. Laboratory work is advised.

Latin or German.—An amount represented by one year of study in an approved high school.

2. *Other applicants* are examined in the following branches:

English.—The same as given above.

Mathematics.—*Arithmetic and Algebra.*—The same as given above.

Geometry.—The elements of Plane Geometry as given in Olney's New Elementary Geometry, Beman and Smith's Plane and Solid Geometry, or an equivalent in other authors.

Latin or German.—The applicant may offer (1) three years of preparation in Latin; or (2) two years in Latin and one year in German; or (3) one year in Latin and two years in German.

Physics and Chemistry.—In each, the same as given above.

Botany.—Laboratory work for half a year with occasional recitations and review exercises.

II. THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY.

The requirements for admission to the four-year course, leading to the degree of Bachelor of Science in Pharmacy, are and will be in every respect, whether on diploma or by examination, the same as the requirements for admission to the Department of Literature, Science, and the Arts, in the groups which fit students for pursuing the University studies required of candidates for the degree of Bachelor of Science. Of the four groups of requirements described on pages 44 to 51, Group III or Group IV gives suitable preparation for work leading to the degree of Bachelor of Science in Pharmacy; but persons who have completed the requirements in Group I or Group II will be admitted to the School on condition of making up the requirement in chemistry included in Group III. For the rules governing admission from diploma schools, see page 54. The rule relating to admission conditions, printed on page 119, applies also to students admitted to the four-year course in the School of Pharmacy.

ADMISSION TO ADVANCED STANDING.

Students who have gained admission to the School may apply for credit in any of the college studies which they have pursued in another college, or in a high school whose graduates are admitted. Such application should be made to the Dean at the time of entering the School, and will be referred to the professor in charge of the studies in which credit is asked. In each case the professor will determine how much credit, if any, can be given. To this end he may appoint a time for examination of the applicant upon the study. Credits from other Schools of Pharmacy are adjusted separately for each study, as stated above. Owing to differences in the order and extent of the studies, credits cannot be counted in years of pharmaceutical college study. Applicants are desired to bring explicit credentials as to the work done, or to send such credentials in advance, if they wish them acted upon before the opening of the school year.

Students in the four-year course, applying for advanced credit, will govern their applications according to the rules in force in the Department of Literature, Science, and the Arts (page 51), though making their application to the Dean of the School of Pharmacy. Credits are received from the other departments, and from the Summer School, of this University. Not more than six hours of credit from the Summer School in any one year can be applied toward the degree of Bachelor of Science.

ADMISSION OF STUDENTS NOT CANDIDATES FOR A DEGREE.

Persons over nineteen years of age who bring evidence of having been engaged in the practice of pharmacy for at least two years, may be admitted to pursue selected studies upon passing the admission requirement in English described on page 207. The same privilege is accorded to persons over twenty-one years of age who are able to study with advantage in the school.

Students admitted under the above provisions are not regarded as candidates for any degree, and they do not become eligible for graduation until they have passed all the examinations for admission to the course leading to the degree which they seek to obtain. To become eligible for graduation with the degree of Pharmaceutical Chemist, the student must, at least, pass the examination for admission required of those who have been engaged in the practice of pharmacy. To become eligible for graduation with the degree of Bachelor of Science, the student must meet the full entrance requirements of the course leading to that degree.

Students not candidates for a degree may select such studies as they are found prepared to pursue, under the regulations of the Faculty. Courses of selected studies are arranged for students, to suit their pur-

poses and qualifications. Selected studies may be continued so long as, in the judgment of the Faculty, they are carried with success and profit.

TIME OF EXAMINATION.

The examination for admission will be held on Thursday, Friday, and Saturday, September 20-22, 1900, in connection with that of applicants for admission to the Department of Literature, Science, and the Arts (see page 53).

COURSES OF INSTRUCTION.

The courses of instruction comprise lectures, recitations, and laboratory work. The amount of work in each course is expressed in hours, an "*hour*" signifying one exercise a week during one semester. A lecture or recitation is usually one hour in length. A laboratory exercise employs three hours, more or less, being continued until the work assigned to one exercise, or a due proportion of the work assigned to the course, has been completed. The satisfactory completion of one exercise a week during one semester, including a sufficient standing in the examination held at the end of the semester, entitles the student to one *hour of credit* toward graduation. It is expected that a lecture or a recitation, with the personal study necessary to maintain the student's standing in the subject, will take in all as much time as a laboratory exercise. Therefore an *hour of credit* is regarded as having the same value whether obtained in a course of lectures or in a course of laboratory exercises.

In the descriptive schedule that follows, the letters A, B, C, etc., indicate the order in which the several courses in any subject should ordinarily be taken by the student. The numbers in brackets are numbers of similar or corresponding courses given in the Department of Literature, Science, and the Arts. A further description of these may be found on pages 87 to 101. The amount of credit towards graduation is indicated by the expression *two hours*, *three hours*, etc.

PHARMACY.

- COURSE A. Theory and Practice of Pharmacy. Lectures and recitations. *Five hours.* Second Semester. Assistant Professor STEVENS.
- COURSE B. Operative Pharmacy and Pharmaceutical Preparations. Laboratory work and recitations. *Eight hours.* First Semester. Assistant Professor STEVENS.
- Course B must be preceded by Course A in analytical chemistry.
- COURSE C. Pharmaceutical Technology and Prescription Practice. Lectures and work at the prescription stand. *Four hours.* Second Semester. Assistant Professor STEVENS.

PHARMACOGNOSY.

MICRO-BOTANY, PHARMACOGNOSY, PHARMACOLOGY, THERAPEUTICS.

- COURSE A [Botany, Course 3]. Micro-botany. Laboratory work. *Two hours.* First Semester. Assistant Professor SCHLOTTERBECK.
- COURSE B [Botany, Course 6]. Micro-botany. Lectures and laboratory work. *Three hours.* Second Semester. Assistant Professor SCHLOTTERBECK.
- COURSE C. Pharmacognosy. Lectures, recitations, and practical exercises. *Three hours.* First Semester. Assistant Professor SCHLOTTERBECK.
- COURSE D. Materia Medica. Recitations and lectures. *Two hours.* First Semester. Dr. WALLACE.
- Course D may accompany Course C.
- COURSE E. Pharmacognosy. Continuation of Course C. *Two hours.* Second Semester. Assistant Professor SCHLOTTERBECK.
- COURSE F. Materia Medica. Continuation of Course D. *Two hours.* Second Semester. Dr. WALLACE.
- Course F may accompany Course E.

GENERAL CHEMISTRY.

- COURSE A [Course 1]. Elementary Inorganic Chemistry. Experimental lectures and recitations. *Three hours.* Either First or Second Semester. Mr. HIGLEY.
- COURSE A¹ [Course 2]. Laboratory work in General Inorganic Chemistry. *Credit arranged with instructors.* Either First or Second Semester. Mr. HIGLEY, Mr. LICHTY, and Dr. HULETT.
- Course A¹ must be preceded or accompanied by Course A or an equivalent.
- COURSE B [Course 5]. Inorganic Chemistry, Descriptive and Experimental. Continuation of Course A. Lectures and recitations. *Five hours.* Second Semester. Mr. HIGLEY.

- COURSE AA. Inorganic Chemistry, Descriptive and Experimental. Lectures and quizzes. *Five hours.* First Semester. Professor FREER.
Course AA is a beginner's course extending further than Course A.

ANALYTICAL CHEMISTRY.

QUALITATIVE ANALYSIS, QUANTITATIVE ANALYSIS, TECHNICAL ANALYSIS.

- COURSE A [Course 1.]. Qualitative Analysis. Laboratory work and recitations. *Ten hours.* Either First or Second Semester. Also given [as Course 3] *five hours* in First Semester and [as Course 3a] *five hours* in Second Semester. Professor O. C. JOHNSON and DR. SULLIVAN.

Course A should be preceded by a course in general chemistry.

- COURSE B [Course 4]. Quantitative Analysis. Laboratory work, lectures, recitations. *Seven hours.* Either First or Second Semester. Professor CAMPBELL.

Course B must be preceded by Course A.

- COURSE C [Course 2]. Advanced Qualitative Analysis. Laboratory work and recitations. Continuation of Course A. *Five hours.* Second Semester. Professor O. C. JOHNSON.

- COURSE D [Course 5]. Advanced Quantitative Analysis. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course D must be preceded by Course B. It is open only to those who receive special permission.

- COURSE E [Course 6]. Iron and Steel Analysis. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course E is open to those who have completed Course B and have received special permission.

- COURSE F [Course 8]. Analysis of Minerals. Laboratory work. *Five hours.* Either First or Second Semester. Professor CAMPBELL.

Course F must be preceded by Course D. It is open only to those who receive special permission.

- COURSE G. Water Analysis. Laboratory work and reading. *Three hours.* Either First or Second Semester. Professor PRESCOTT and Assistant Professor GOMBERG.

Course G must be preceded by Course B. It is open only to those who receive special permission.

SHORTER COURSES IN QUALITATIVE CHEMISTRY FOR STUDENTS NOT CANDIDATES FOR A DEGREE.

- COURSE H. Three Months' Course in Qualitative Chemistry. Laboratory work and recitations. Three classes are formed during the year. They are instructed by a graduate assistant under the direction of Professor PRESCOTT.

COURSE I [Course 3]. First Steps in Qualitative Analysis. Laboratory work and recitations. Second Semester. Professor O. C. JOHNSON.

Course I constitutes about one-half of Course A in analytical chemistry. It gives a little more analytical work than Course H.

ORGANIC CHEMISTRY.

INCLUDING ANALYTICAL AND APPLIED ORGANIC CHEMISTRY.

COURSE A [Course 10]. Carbon Compounds. Lectures. *Five hours.* First Semester. Professor PRESCOTT.

Course A must be preceded by a course in general chemistry and a course in analytical chemistry.

COURSE B. Organic Preparations. Laboratory work in organic synthesis. *Three, four, or five hours.* Either First or Second Semester. Assistant Professor GOMBERG.

Course B may accompany or follow Course A.

COURSE D [Course 14]. Organic Analysis and Drug Assaying. Laboratory work and lectures. *Seven hours.* Second Semester. Assistant Professor GOMBERG and Mr. P. F. TROWBRIDGE.

Course D must be preceded by Course A and by a course (B) in quantitative analysis.

COURSE DD. Sanitary and Commercial Analysis. Continuation of Course D. Laboratory work and reading. *Five hours.* Either First or Second Semester. Professor PRESCOTT and Assistant Professor GOMBERG.

COURSE E. Toxicology. Inorganic and Organic. Chemical and microscopical. Laboratory work and reading. *Three hours.* Either First or Second Semester. Professor PRESCOTT and Assistant Professor GOMBERG.

Course E must be preceded by Course D.

BEGINNING COURSES IN ORGANIC CHEMISTRY IN SECOND SEMESTER.

COURSE F¹. Organic Chemistry. Lectures. *Two hours.* Mr. P. F. TROWBRIDGE.

COURSE F² [Course 28]. Organic Chemistry. Lectures. *Four hours.* Professor PRESCOTT.

Courses F¹ and F² are intended primarily for classes in other departments of the University, and are open to students in the School of Pharmacy only by special permission.

PHYSIOLOGICAL CHEMISTRY AND BACTERIOLOGY.

COURSE A [Course 7]. Physiological Analysis, including the Analysis of Urine. Laboratory work and lectures. *Five hours.* Professor NOVY.

Course A is given three times a year, each class working for three months. It must be preceded by a course in qualitative analysis and a course in organic chemistry.

COURSE B [Course 8]. Physiological Analysis, Continuation of Course A. Laboratory work and lectures. *Seven hours.* Either First or Second Semester. Professor NOVY.

Course B must be preceded by Course A and a course in quantitative analysis.

COURSE [C Course 3]. Bacteriology. Laboratory work. *Five hours.* Professor NOVY.

Course C is given three times a year, each class working for three months.

PHARMACOLOGY.

COURSE A. Laboratory work and reading. *Three hours.* Either First or Second Semester. Professor CUSHNY.

Course A must be preceded by Courses A and D in organic chemistry, and by previous work in physiology. It is open only to those who receive special permission.

COURSE B. Physiology. Lectures and recitations. *Five hours.* First Semester. Professor LOMBARD.

Course B must be preceded by a course in organic chemistry, and it is also desirable that the student have had studies in anatomy.

It is open only to those who receive special permission.

MINERALOGY.

COURSE A. Crystallography. Twelve lectures supplemented by practical exercises. Second Semester. Professor PETTEE.

COURSE B [Course 1]. Lectures and practice. *Two hours.* Either First or Second Semester. Professor PETTEE.

Course B should be preceded by a course in general chemistry. It includes Course A.

COURSE C [Course 2]. Lectures and practice. *Five hours.* Second Semester. Professor PETTEE.

Course C should be preceded by a course in general chemistry and a course in analytical chemistry. It includes Course B.

PHYSICS.

COURSE A [Course 1]. Mechanics, Sound, and Light. *Five hours.* Second Semester. Professor REED.

Course A is open to those who have passed an entrance examination in physics, and to all others who have sufficient preparation.

A knowledge of plane trigonometry is indispensable.

COURSE B [Course 2]. Heat, Electricity, and Magnetism. Lectures. *Five hours.* First Semester. Dr. A. TROWBRIDGE.

Course B must be preceded by Course A and by a course in general or in analytical chemistry.

RESEARCH.

Courses in Research, in either the first or second semester, are open to any regularly registered student, suitably prepared by previous training to enter upon an investigation, whether the results are to be published or not. The work undertaken is in charge of one or more members of the Faculty, and is entitled to credit toward a degree in proportion to its extent and value. The opportunity for undergraduates to enter upon research work is usually limited to the last year of the four-year course, and to the last semester of the two-year course. The holder of a fellowship devotes his time to experimental research with publication of the results in view.

EXAMINATIONS.

An examination upon each course of instruction is held at the time the work of the course is completed. The examinations, therefore, are held mostly at the end of a semester (in February and in June).

The result of an examination is reported to the Faculty by the professor in charge, for each student enrolled, in terms as follows:

Passed.—Entitling the student to full credit for the course.

Conditioned.—Imposing some specified condition, usually to take another examination, the condition to be fulfilled before credit can be given.

Provisionally Passed.—Withholding the credit from the course until the student shall have done better work in other studies, in the judgment of the Faculty as a whole, which can change the record of Provisionally Passed to a record of Passed, or Conditioned, or Not Passed, whenever such change shall be justified by the scholarship of the student in his several studies.

Not Passed.—Requiring the student to go over the regular exercises of the study again before he receives another examination.

Absent.—With statement of the cause of absence; if the student have left the class, stating at what time; or stating if absent without excuse or explanation.

SUCCESSION OF STUDIES.

I. IN THE TWO-YEAR COURSE.

First Year, First Semester.—General Chemistry AA; Analytical Chemistry A (qualitative); Pharmacognosy A (micro-botany).

First Year, Second Semester.—Analytical Chemistry B (quantitative);

Pharmacognosy B (micro-botany); Pharmacy A; Mineralogy A (crystallography).

Second Year, First Semester.—Pharmacy B (laboratory and lectures); Organic Chemistry A; Pharmacognosy C and D (materia medica).

Second Year, Second Semester.—Organic Chemistry D (drug assaying); Pharmacy C (technology and prescription practice); Pharmacognosy E and F (materia medica); Research.

The studies enumerated above are without exception required for the degree of Pharmaceutical Chemist. They constitute an amount of work which taxes the full working power of a student of average quickness and strength of scholarship. Students who desire a longer time for the same work may apply for it on entering college, or during the first semester, and obtain from the Faculty a distribution of all the work through five semesters, or six semesters, as found advisable in each case.

II. IN THE FOUR-YEAR COURSE.

Students who enter the School prepared in Latin, in German, and in chemistry, as high school studies, are advised to arrange their work in accordance with the scheme printed below. Students who enter with French instead of German, or without chemistry, are advised, in general, to follow the same scheme, with such modification as may be necessary.

First Year, First Semester.—Mathematics [1a], three hours; French, four hours; German, two hours; Pharmacognosy A, two hours; General Chemistry A¹, three hours; English [1], two hours.

First Year, Second Semester.—Mathematics [2a], four hours; Physics A, five hours; Pharmacognosy B, three hours; German, two hours; English [1a], two hours.

Second Year, First Semester.—Analytical Chemistry A, ten hours; Pharmacognosy C, two hours; French, two hours; Mineralogy B, two hours.

Second Year, Second Semester.—Analytical Chemistry B, seven hours; Pharmacy A, three hours; Pharmacognosy E, two hours; General Chemistry B, five hours.

Third Year, First Semester.—Pharmacy B, ten hours; Organic Chemistry A, and a part of B, five hours.

Third Year, Second Semester.—Organic Chemistry D, five hours; Pharmacy C, four hours; Elective studies, not to exceed seven hours, taken from the following: Physiological Chemistry A, five hours, or C, five hours; Organic Chemistry B, two hours, or C, five hours; French or German; Physics B, five hours.

Fourth Year, First Semester.—Pharmacognosy D, three hours; Pharmacology A, three hours, and B, five hours. Elective studies and studies in research.

Fourth Year, Second Semester.—Pharmacognosy E and F, five hours; Analytical Chemistry G, three hours; Research.

III. IN SELECTED STUDIES.

Students not expecting to graduate can enter for selected studies at the beginning of the first semester (September 25, 1900), at the beginning of the second semester (February 11, 1901), and, for certain short courses in analytical chemistry and in physiological chemistry, at the time the courses begin.

For pharmaceutical purposes, the student who is limited to one year will do well to take the regular studies of the first year in the Two-Year Course as given on page 214.

Of the shorter courses usually most available for students having limited time the following may be named:

Pharmacognosy A and C; General Chemistry A and AA; Organic Chemistry F¹ and F²; Analytical Chemistry H and I; Organic Chemistry F³.

All the work of the School is open to students not candidates for a degree, so far as they are prepared to engage in it.

ELECTION AND REGISTRATION OF STUDIES.

On or before the first Saturday of each semester, each student should determine upon his studies for that period, and register them in due form upon an "election blank" obtained from the Secretary of the Faculty.

In the two-year course the studies are mainly though not wholly, the same for all students, and the order of succession is as given on page 214. When opportunity of choice is offered, the student should consult in advance with members of the Faculty.

If a student registered in the School of Pharmacy takes work in mathematics, physics, language, or other subjects, in the Department of Literature, Science, and the Arts, he must also register such studies on an "election blank" of that department countersigned by the Dean of the School of Pharmacy.

REQUIREMENTS FOR GRADUATION.

[Experience in the business of pharmacy is not made a requirement for a degree.]

THE DEGREE OF PHARMACEUTICAL CHEMIST.

The degree of Pharmaceutical Chemist is conferred upon students who have completed the courses of prescribed study described on pages 214 and 215 and have obtained credit for examination in these courses in the manner above stated.

THE DEGREE OF BACHELOR OF SCIENCE IN PHARMACY.

To obtain the recommendation of the Faculty for the degree of Bachelor of Science in Pharmacy, the student must secure *one hundred and twenty Hours of Credit*. The prescribed portion of this work is as follows, the figures in brackets denoting courses given in the Department of Literature, Science, and the Arts (compare pages 63 to 88):

In English: Courses [1], [1a].

In German: (a) for those who entered *without* German, Courses [1], [2]; or (b) for those who entered *with* German, Course [3].

In French: (a) for those who entered *without* French, Courses [1], [2], or an equivalent; or (b) for those who entered *with* French, Course [3].

In Mathematics: Courses [1a], [2a].

In Physics: Course A [1].

In General Chemistry: (a) for those who entered *without* chemistry, Courses A, B; or (b) for those who entered *with* chemistry, Course B.

In Analytical Chemistry: Courses A, B.

In Organic Chemistry: Courses A, D.

In Mineralogy: Course B.

In Pharmacognosy: Courses A, B, C, D, E, F.

In Pharmacy: Courses A, B, C.

From the other courses offered in the School, or in other departments of the University, the student, with the approval of the Faculty, must choose and complete enough, including those above prescribed, to make in all *one hundred and twenty* hours of credit.

THE DEGREE OF MASTER OF SCIENCE IN PHARMACY.

The degree of Master of Science in Pharmacy is conferred upon students already holding the degree of Bachelor of Science in Pharmacy, who have pursued for at least a year an approved course of graduate study, comprising a major subject and two minor subjects, and have passed satisfactory examinations thereon.

FELLOWSHIPS AND GRANTS FOR RESEARCH.**STEARNS FELLOWSHIP.**

The Stearns Fellowship in research has been maintained since 1895 by means of gifts made for this purpose by Messrs. Frederick Stearns & Company, of Detroit. The income of the Fellowship at present is three hundred and fifty dollars a year. In 1899-1900 the research is on the chemistry of certain medicinal plants. Appointments to the Fellowship are made by the Board of Regents, on recommendation of the Faculty.

GRANT FOR RESEARCH.

The Committee of Revision and Publication of the Pharmacopœia of the United States has made a grant for the support, under its direction, of special investigation in the School of Pharmacy. Persons selected for this important service are registered as graduate students and devote themselves entirely to the work of the research undertaken.

LIBRARY, BOOKS OF REFERENCE, AND TEXT-BOOKS.

The School has an extensive library, the main portion of which is shelved with the General Library of the University (see page 24). It contains complete sets of the journals, the original repositories of the sciences related to pharmacy, as well as the current periodicals of the profession, encyclopædias and hand-books of chemistry and pharmacy, and the latest works of value in study. The works of reference in use in the School may be estimated at four thousand volumes.

A working library, in a reading alcove of the chemical building, is provided with more than a thousand volumes for immediate reference, duplicates of those in the General Library. These works are in constant use by students in connection with their laboratory work, and in preparing for their recitations. Files of current numbers of the journals of chemistry and of pharmacy are also kept in the reading room.

The text-books in use in the school include the following: In General Chemistry, Freer; in Qualitative Analysis, Prescott and Johnson; in Quantitative Analysis, Cheever and Smith's Select Methods; in Pharmacy, the U. S. Pharmacopœia and Coblenz; in Botany, Bastin; in Pharmacognosy, Flückiger, Maisch; in Organic Chemistry, Bernthsen; in Organic Analysis, Prescott.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Laboratory Expenses.—These vary with the prudence and economy of the student, the average amount being about one dollar and twenty cents a week.

For additional information in regard to expenses see pages 40 to 42.

* The Matriculation Fee and the Annual Fee must be paid in advance. No portion of the fees can be refunded, except by order of the Board of Regents, to students who wish to leave the University during the academic year.

Homœopathic Medical College.

A special Announcement giving further information in regard to this College is published annually. For copies of this Announcement or for other information relating to the College, address Dr. Royal S. Copeland, Secretary of the Faculty, Ann Arbor, Michigan.

THE Homœopathic Medical College, established as a Department of the University in 1875, offers superior advantages to students who desire thorough instruction in homœopathy. It has commodious buildings on the University campus and, a few blocks distant, a well-equipped hospital. A new hospital, now in process of erection and to be ready for occupancy in the fall of 1900, will furnish enlarged and improved facilities for clinical instruction.

The college year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901). The full course covers four college years.

REQUIREMENTS FOR ADMISSION.

Every applicant for admission to the Homœopathic Medical College must be at least seventeen years of age, and must present to the Faculty satisfactory evidence of a good moral character.

Women are admitted, as to all other departments of the University, on the same conditions as men.

Matriculates in a regular course in the Department of Literature, Science, and the Arts (page 43), graduates of literary colleges of good

standing, graduates of approved diploma schools* and of other high schools of equal standing, are admitted without examination on presentation of proper evidence to the Secretary of the Faculty. For all others the requirements for admission are as follows:

English.—Each applicant will be asked to write an essay of not less than two pages (foolscap), correct in spelling, punctuation, capital letters, grammar, and paragraphing.

Mathematics.—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution, and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the First Degree containing two or more unknown quantities. *Geometry.*—Plane Geometry.

Physics.—An amount represented by Carhart and Chute's Elements of Physics.

Botany.—The Elements of Vegetable Anatomy and Physiology as given in Spalding's Introduction to Botany.

Zoology.—Packard's Zoology, briefer course; or McMurrich's Invertebrate Morphology.

History.—Myers's General History, or an equivalent; and Johnston's History of the United States or McLaughlin's History of the American Nation.

Latin.—Jones's First Latin Book, or an equivalent amount in any other text-book. An applicant who is not prepared to pass the examination in Latin, may take a condition in this subject, which condition he must remove before entering on the work of the second year.

Examinations for admission will be held Monday, September 24, 1900. Applicants are required to present themselves on this day, as they are expected to be in attendance on the first day of the term, when the regular course of instruction begins. To provide for cases in which it is absolutely impossible for the applicant to be present at the time announced, supplementary examinations will be held at such time as may be determined upon by the Faculty; but no excuse, except of an urgent character, will be accepted for failure to appear at the first examination.

Before admission to examination, every applicant is required to present to the Secretary of the Faculty the Treasurer's receipt for the payment of the matriculation fee and the annual fee; it will, therefore, be necessary for him to apply first to the Secretary of the University at his office in University Hall, register his name as a student in the Homœopathic Medical College, and pay his fees to the Treasurer. In case of rejection, the money paid preliminary to examination will be refunded.

*The diploma schools comprise all those approved by the Faculty of the Department of Literature, Science, and the Arts. Compare page 54.

ADMISSION TO ADVANCED STANDING.

Persons who have studied medicine elsewhere may be admitted to advanced standing upon evidence of proficiency in the studies which have already been pursued by the class to which they seek admission.

Students in the Department of Literature, Science, and the Arts, who desire to study medicine in this college can gain advanced standing by taking, as a part of their work in that department, courses practically identical with some of those prescribed for graduation in medicine. By making proper choice of elective studies, it is possible for a student to earn the two degrees, Bachelor of Science and Doctor of Medicine, in six years (compare pages 107 to 110 and 174). Students desiring to take advantage of this opportunity for combining literary and professional work should consult the Dean of the College, and should consult frequently, after the first year of residence in the University, with a committee appointed to consider questions arising in this connection. This committee consists at present of Professors W. B. HINSDALE and R. S. COPELAND.

COURSE OF INSTRUCTION.

Surgery.—A complete course of lectures on minor surgery and bandaging is given to students of the first year.

A complete course of lectures on operative surgery, fractures, and dislocations, and on the principles of surgery, is given to students of the third and fourth years.

Candidates for graduation are required to demonstrate their knowledge of operative surgery by operating on the cadaver, a requisite number being provided by the authorities without expense to the class.

Students are assigned cases to diagnose and present to the class; and, under proper direction, are allowed to make the necessary preparations for operations, and to assist, when assistance is required. Advanced students under the immediate supervision of the surgeon in charge, are also allowed to treat patients that have been operated upon. Special effort is made to remove the criticism against practitioners of Homœopathy that they have no knowledge of surgery.

Materia Medica and Therapeutics.—Materia Medica is taught as a natural science. Three lectures are given weekly, based as far as possible on studies of the original provings, paying special attention to the genius of each drug, its characteristics, and its relationship to other drugs. The physiological action of drugs, as ordinarily understood, is duly considered.

Systematic instruction in the principles and philosophy of Homœopathy is a special feature. This course, based upon Hahnemann's

Organon is given to the whole body of students, beginners as well as the more advanced, in order to fix in their minds the underlying principles of the science of homœopathic practice.

A thorough laboratory course in drug proving is a special feature of this college. Students are required to do a certain amount of original work in drug pathogenesis under the supervision of the professor of materia medica. A course in homœopathic pharmacology is also given.

Pharmacy and Pharmacology.—Each student is required to prepare from the crude material, ready for use, a series of remedies. A practical course in field medical botany is given by a demonstrator who goes with the class to places where native medicinal plants are found growing in their natural condition. The plants are gathered and prepared for making mother tinctures and for trituration.

The Principles of Medicine.—The principles of medicine are taught in a separate course in which the scientific explanation of disease, and the principles upon which a system of cure must be constructed, are discussed. Attention is given to historic medicine and the various systems that have been in vogue as means of attempted cure. In the medical clinic the idea is never lost sight of that the function of the physician is to cure the sick, and that to accomplish this end accurate prescribing is of the highest importance.

Theory and Practice.—The instruction in theory and practice is didactic and clinical. The subject is divided into separate courses covering all the ground, both general and special, with which a physician in general practice must be familiar. In this connection a special course in diseases peculiar to childhood, and in the feeding of infants and invalids, is given. The aim is to make the student, by applying his knowledge of pathology, a good diagnostician, and, by his knowledge of materia medica, a good prescriber. In the clinics especial attention is given to dietetics and other regimenal means of treatment.

Medical and Physical Diagnosis.—Diagnosis is taught as a separate branch, with the use of text-books supplemented by lectures and practical demonstrations. This subject occupies one hour a week throughout an entire year.

Obstetrics and Gynecology.—The course of study in these branches is so arranged that separate lectures are given to the several classes in a graded course. Students of the first year are drilled in the fundamental branches of gynecology, and are taught the use of instruments, the various methods of making gynecological examinations, etc. With the third year the student enters upon both didactic and clinical work. In the last year of the course lectures are delivered upon special subjects and the senior students are required to make physical and local examin-

ations in the sub-clinics of this department, thus familiarizing themselves with the various methods of practicing touch, palpation, obstetric auscultation, etc., and utilizing to the best possible advantage the many patients availing themselves of this special department of the clinic. Cases of obstetrics are assigned to each senior for his especial delivery and personal attendance.

Ophthalmology, Otology, and Laryngology.—Regular lectures on these important specialties, amply illustrated from the abundance of clinical material at the disposal of the Faculty, are given in the third and fourth years. The eye-and-ear, nose, and throat clinic forms one of the most interesting features of the clinical work, and affords the class every facility for a thorough practical study of all the diseases of these organs, that come under the observation of the physician. Students have cases assigned them for dressing and treatment, and thus acquire practical skill and knowledge in diagnosis, in the use of the various instruments, and in the correction of errors of refraction.

Mental Diseases.—A special course of lectures on mental diseases is given by Dr. Oscar R. Long, Superintendent of the Michigan Asylum for Insane Criminals.

Nervous Diseases.—Every effort is used to make this department of study as complete as possible. There is an abundance of clinical material to demonstrate all the more frequent forms of nervous diseases as well as many of the rarer ones.

Diseases of Children.—A full course of instruction is given in this subject.

Demonstration Courses in the Specialties.—Before graduation each student is required to do actual work in demonstrating his medical and surgical skill. By operating upon the cadaver and upon animals; by manipulation of manikins and models; by actual dressing of wounds and bandaging; by thorough drill in the practical use of the ophthalmoscope, the laryngoscope, the test case, and spectacle fitting; by the use of the microscope and spectroscope; by the making of tinctures and dilutions; by bedside demonstrations and examinations; by actual prescribing; by these methods the students become practical and are prepared to make successful physicians. The classes are divided into sections, and each individual has his share of actual work. For these demonstration courses there is no extra expense. Students also assist at operations and take turns in ward visiting. It is believed that the advantages offered for the practical application of theoretical knowledge are unsurpassed in this country. Students come in personal contact with the members of the Faculty and profit accordingly.

INSTRUCTION FOR WOMEN.

The course of instruction for women is in all respects equal to that for men. Practical Anatomy is pursued by the two sexes in separate rooms; but in the lectures, in public clinics, in the laboratories, and in various class exercises, it is found that both sexes may attend with propriety at the same time.

SCHEDULE OF STUDIES.

The following schedule shows the arrangement of studies for the course of four years. Three or more lectures are given each forenoon; the afternoons are devoted to laboratory and to clinical work. The subjects taught by members of the Faculty of the Department of Medicine and Surgery are marked with an asterisk (*). For further information in regard to this work see page 171.

FIRST YEAR.**LECTURES AND RECITATIONS IN FIRST SEMESTER.**

<i>Subjects.</i>	<i>Time Required.</i>
Principles of Medicine,	1 hour a week.
*Osteology,	3 hours a week.
*General Anatomy,	2 hours a week.
*General Chemistry,	5 hours a week.
*Bacteriology,	4 hours a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Materia Medica,	2 hours a week.
Pharmacy,	1 hour a week.
*General Anatomy,	2 hours a week.
*Physics,	4 hours a week.
*Organic Chemistry,	5 hours a week.
*Histology,	4 hours a week.
*General Chemistry,	2 hours a week.

LABORATORY WORK IN FIRST YEAR.†

<i>Subjects.</i>	<i>Time Required.</i>
*Anatomy,	Every day for 12 weeks.
*Chemistry,	Every day for 12 weeks.
*Bacteriology,	Every day for 12 weeks.

†Four to five hours constitutes a day's work in the laboratory.

SECOND YEAR.**LECTURES AND RECITATIONS IN FIRST SEMESTER.**

<i>Subjects.</i>	<i>Time Required.</i>
Materia Medica,	2 hours a week.
Minor Gynæcology,	1 hour a week.
Principles of Medicine,	1 hour a week.
Theory and Practice,	1 hour a week.
Surgery,	2 hours a week.
*Physiology,	5 hours a week.
*Hygiene,	3 hours a week.
*Embryology,	4 hours a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Materia Medica,	2 hours a week.
Minor Gynæcology,	1 hour a week.
Principles of Medicine,	1 hour a week.
Theory and Practice,	1 hour a week.
Surgery,	2 hours a week.
Pathology,	2 hours a week.
*Physiology,	5 hours a week.
*Physiological Chemistry,	3 hours a week.
*Hygiene,	2 hours a week.

LABORATORY WORK IN SECOND YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
*Anatomy,	Every day for 12 weeks.
*Physiological Chemistry,	Every day for 12 weeks.
*Histology,	Every day for 6 weeks.

THIRD YEAR.**LECTURES AND RECITATIONS IN THIRD YEAR.**

<i>Subjects.</i>	<i>Time Required.</i>
Minor Gynæcology,	1 hour a week.
Major Gynæcology,	2 hours a week.
Obstetrics,	2 hours a week.
Surgery,	3 hours a week.
Theory and Practice,	3 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.
Materia Medica,	3 hours a week.
Pathological Histology,	2 hours a week.

LABORATORY WORK IN THIRD YEAR.

<i>Subject.</i>	<i>Time Required.</i>
*Practical Pathology,	Every day for 8 weeks.

CLINICAL COURSES IN THIRD YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
General Medicine,	2 hours a week.
Surgery,	2 hours a week.
Gynæcology,	2 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.

FOURTH YEAR.

LECTURES AND RECITATIONS IN FIRST SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Theory and Practice,	3 hours a week.
Surgery,	3 hours a week.
Obstetrics and Gynæcology,	3 hours a week.
Materia Medica and Therapeutics,	3 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.
Mental and Nervous Diseases,	1 hour a week.

LECTURES AND RECITATIONS IN SECOND SEMESTER.

<i>Subjects.</i>	<i>Time Required.</i>
Theory and Practice,	3 hours a week.
Surgery,	4 hours a week.
Obstetrics and Gynæcology,	3 hours a week.
Materia Medica and Therapeutics,	3 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.
Mental and Nervous Diseases,	1 hour a week.
Medical Jurisprudence,	1 hour a week.

CLINICAL COURSES IN FOURTH YEAR.

<i>Subjects.</i>	<i>Time Required.</i>
General Medicine,	2 hours a week.
Surgery,	2 hours a week.
Gynæcology,	2 hours a week.
Ophthalmology, Otology, and Laryngology,	2 hours a week.

EXAMINATIONS.

At the end of each semester examinations (written, oral, or both written and oral) are held on all subjects taught during the semester, and each student's grade is entered upon the records of the Faculty.

Students "*conditioned*" cannot apply for another examination in the same subject until the close of the next course or semester, except that a student conditioned at the close of the college year may ask for another examination in the first two weeks of the following year. Students reported "*not passed*" are required to take the course over again before applying for another examination.

REQUIREMENTS FOR GRADUATION

To be admitted to the degree of Doctor of Medicine, a student must be twenty-one years of age and possess a good moral character. He must have completed the required courses in laboratory work, and have passed satisfactory examinations on all the required studies included in the full course of instruction. He must have been engaged in the study of medicine for the period of four years, the last two of which must have been in this college.

GRADUATE COURSES.

Medical science has made such rapid progress during recent years that graduates of a short time ago feel the necessity of returning to the medical centres for further light in the modern advances. The laboratories and special courses of this college offer superior advantages to graduates.

The nature of the work arranged for graduate students in hygiene, bacteriology, electrotherapeutics, pathology, physiology, histology, chemistry, and anatomy may be learned by a reference to page 175.

In the practical branches, such as materia medica, physical diagnosis, surgery, ophthalmology, otology, laryngology, obstetrics, and gynæcology, graduate instruction may be had, by special arrangement with the professors in charge, in connection with the demonstration courses given to students in the last two years of their course.

SPECIAL LECTURE AND CLINICAL COURSES FOR GRADUATES AND PRACTITIONERS.

From April 23 to May 4, 1900, a special course of 20 lectures is offered on a variety of subjects interesting to graduates and to physicians in active practice, and in this connection there is also offered a special practitioner's clinical course, covering nine clinics, from April 23 to April 27. A special circular giving further details will be sent on application to Dr. R. W. Copeland, Secretary of the Faculty.

In this work the Faculty will be assisted by Dr. JAMES M. LEE, of Rochester, N. Y., Dr. FRANK KRAFT, of Cleveland, O., and Dr. JOHN C. NOTTINGHAM, of Bay City.

The fee for the lecture course is *ten dollars*, and a certificate stating the amount of work accomplished will be given all those who complete the course and who already hold the degree of M.D. No fee is charged and no certificate is given those who attend the clinics alone.

FACILITIES FOR INSTRUCTION.

Museums and Laboratories.—The museums of anatomy and materia medica, comprising thousands of specimens, models, and charts, afford the best means attainable for the close study of anatomy, physiology, and pathology. The general and special cabinets of the University, containing about 255,000 specimens, are also open freely to all students. (Compare pages 25 to 30.) The facilities for the study of chemistry, afforded by the chemical laboratory, are not excelled in any medical college in this country, and the arrangements for the laboratory work are such that medical students, in classes, and working under the direction of the professors in charge, receive practical instruction in the courses in qualitative chemistry and in the analysis of urine, a knowledge of which has become absolutely indispensable to the successful physician. The histological laboratory, amply supplied with microscopes, sphygmographs, stereopticon, etc., offers rare facilities for the prosecution of practical work in experimental physiology and histology. The hygienic and anatomical laboratories are models of beauty and convenience, affording facilities for instruction in hygiene and in practical anatomy, unsurpassed, if equalled, by those of any other institution of learning in the United States. For a more full description of the laboratories of the University used by homœopathic students in common with students of other departments, see pages 30 to 34, and 177 to 182.

Pathogenetic Laboratory.—A laboratory of experimental pathogenesis, in the Homœopathic Building, is equipped with the necessary apparatus for experimentation with medicinal substances on the healthy human body. This is a special feature of this college. Proving is made, and each student is required to do a certain amount of original work and research in the pathogenic field. A complete course in homœopathic pharmaceutics is also given in this laboratory.

Libraries.—The General Library of the University (see page 24) is open to the free use of students. Important additions have recently been made to the collection of works on homœopathy. There is also a free reading room in the Homœopathic Building, where all the homœopathic publications of note are kept on file.

Other Facilities.—Students in the Homœopathic College have the privilege of attending the scientific and philosophical lectures, collateral

to medicine, given in the Department of Literature, Science, and the Arts. For a description of the gymnasiums, and the conditions on which they are open to students, see page 35.

THE UNIVERSITY HOSPITAL, HOMŒOPATHIC.

[The new hospital, now in process of erection, will be ready for occupancy in the fall of 1900.]

The University Hospital, Homœopathic, is in charge of a competent resident medical officer and an experienced matron, and is provided with a corps of trained nurses; it contains large, airy, and well-lighted wards for male and female patients, private rooms for special patients, rooms for antiseptic surgery and for lying-in cases, dispensary, etc., all under the immediate direction of the Faculty, the members of which attend upon the sick in the hospital, and draw from them the material for clinical instruction.

Surgical, medical, gynæcological, neurological, and ophthalmological clinics are held daily in the spacious clinical amphitheatre, at which times examinations of patients are made by the professors in charge, and by students under the direction of professors, prescriptions given, and surgical operations performed in the presence of the class. The several clinics are held on separate days, of which the profession throughout the State will be notified. The clinical advantages of the college are steadily increasing.

In addition to special rooms with all modern apparatus and appliances for antiseptic surgery, there is a lying-in ward. Each senior student is required to attend cases of labor, and become familiar with the duties of the lying-in room, under the immediate direction of a member of the Faculty.

The hospital is furnished with all modern electrical appliances, and, where indicated, skilled attendants apply electrical treatment. The junior and senior students receive special instruction in this line.

Much attention is paid to physical diagnosis, and the abundance of clinical material furnishes many interesting cases. Students are required to take the history of patients and, under proper supervision, make personal examination and prescribe remedies. It is the aim of the Faculty to make clinical instruction systematic and thorough.

The hospital is kept open for patients during the college year, but no contagious diseases are admitted. Under the present organization, patients are much better accommodated, and clinical instruction is rendered more systematic and efficient than was formerly possible. The expenses to patients are only for their board, for unusual appliances or

special nursing, and for medicines, the services of the Faculty being rendered gratuitously to those made available for clinical instruction.

Patients who desire to enter the hospital are requested to write to the medical superintendent to ascertain if there is room for their accommodation, and to obtain a circular giving more fully the rules governing admission.

Training School for Nurses.—In connection with the Hospital there is a training school for nurses under the charge of a competent and experienced principal. The term of study and service extends through two years, at the expiration of which time those who have proved trustworthy are granted certificates of graduation. For further information in regard to this school, application may be made to Dr. ROYAL S. COPELAND, Ann Arbor, Michigan.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.

Diploma Fee.—For all alike, *ten dollars*.

Graduate Courses.—A fee of *ten dollars* is charged graduate students for each course taken. Graduate students who pursue laboratory courses, are also required to pay the ordinary laboratory expenses of such courses.

Laboratory Expenses.—In the laboratories, the students pay for the material used, and the expenses vary somewhat with the care and economy practiced. The required laboratory courses cost approximately as follows:—

Anatomy.....	\$20 00
Chemistry.....	15 00
Bacteriology.....	15 00
Physiological Chemistry.....	15 00
Histology.....	7 00
Pathological Histology.....	10 00

The total amount of fees paid to the University during the whole four years' course, for matriculation, incidental expenses, materials used, and diploma, is, for Michigan students, about \$240.00; and for others, about \$295.00, varying a little with the student's actual laboratory expenses.

*The Matriculation Fee and the Annual Fee must be paid in advance, and no student can select his seat until after such payment. No portion of the fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

For additional information in regard to expenses see pages 40 to 42.

Students arriving in Ann Arbor, and desiring further information, should apply at the office of the Faculty, in the Homœopathic College, North University Avenue. The office will open daily after the 20th of September, and members of the Faculty, or some one who can give information, will be in attendance.

College of Dental Surgery.

A special Announcement giving further information in regard to this College is published annually. For copies of this Announcement, or for other information relating to the College, address Dr. J. Taft, Dean of the College, Ann Arbor, Michigan.

THE College of Dental Surgery was established as a Department of the University in 1875. The college year extends from the Tuesday preceding the last Wednesday in September to the Thursday preceding the last Wednesday in June (September 25, 1900, to June 20, 1901). The lectures close about June 9, in order to allow time for the final examinations before Commencement.

REQUIREMENTS FOR ADMISSION.

Applicants for admission must be at least eighteen years of age, and must present to the Faculty satisfactory evidence of good moral character. This should be in the form of a letter from a reputable dental or medical practitioner in the place from which the applicant comes.

Matriculates in the other scientific departments of the University, and graduates of recognized colleges, academies, or high schools, are admitted without further examination on presentation of proper diploma or certificate. Commercial and English diplomas are accepted only so far as they include the studies indicated in the scheme for examination as printed below. Applicants are requested to bring or send to the Secretary of the Faculty a statement from the superintendent of the school from which the diploma was obtained, naming the subjects studied and the credit given for each study. Blank forms on which to make such statement will be furnished on application to Dr. N. S. Hoff, Secretary of the Faculty of the College.

All other applicants are examined as to their previous education and their fitness to enter on the technical study of dentistry. The subjects on which examinations are held are as follows:

English.—The purpose of the examination is to test the applicant's ability to write good English. To this end he will be asked to write an essay of at least three hundred words, upon some subject assigned him at the examination. The language of the essay must be grammatical and clear. The spelling, punctuation, and capitalizing must be correct. The applicant must show ability to discriminate in the use of words and to construct well-organized sentences and paragraphs.

As preparation for this requirement, sustained and regular practice in writing is earnestly recommended. The student should prepare numerous written exercises so selected as to give proper training in several types of discourse.

History.—Myers's General History, or an equivalent, and McLaughlin's History of the American Nation.

Mathematics.—*Arithmetic.*—Fundamental Rules, Fractions (common and decimal), Denominate Numbers, Percentage, Proportion, Involution and Evolution; and the Metric System of Weights and Measures. *Algebra.*—Fundamental Rules, Fractions, Equations of the First Degree, containing two or more unknown quantities. *Geometry.*—Plane Geometry.

Physics.—An amount represented by Avery's Natural Philosophy or Carhart and Chute's Elements of Physics.

Latin.—Jones's First Latin Book, or an equivalent amount in any other text-book, and two books of Caesar's Gallic War.

General Chemistry.—The requirement is intended to cover one year's work. As a text-book, Remsen's Introduction to the Study of Chemistry is recommended. The text should be accompanied by laboratory work, if possible.

Botany, Zoology, Physical Geography, and Physiology.—The applicant must offer *two* of these subjects. The requirements in each subject are as follows:

Botany.—The elements of Vegetable Morphology and Physiology as given in Spalding's Introduction to Botany.

Zoology.—Packard's Zoology, briefer course.

Physical Geography.—Tarr's Elementary Physical Geography, especially chapters 9 to 21 inclusive, or an equivalent.

Physiology.—Martin's The Human Body.

An entrance examination will be held in Ann Arbor, beginning at 10 A. M., Saturday, September 22, 1900. Applicants are expected to be present at that time, but to provide for cases in which it is impossible for the applicant to be present, other examinations will be held at such times as may be determined by the Faculty.

Before admission to the examination, every student is required to present to the Dean of the Faculty the Treasurer's receipt for the payment of the matriculation fee and annual fee. It will therefore be necessary for the candidate to apply first to the Secretary of the University at his office in University Hall, register his name as a student in the College of Dental Surgery, and pay his fees to the Treasurer. In case of rejection, the money paid preliminary to examination will be refunded.

Admission examinations are also held at times designated by the examiners between June 1 and September 10 of each year, at the places and by the persons named below:

Dr. William Mitchell, No. 39 Upper Brook St., London, W., England.

Dr. Victor H. Jackson, 240 Lenox Ave., New York, N. Y.

Dr. Alfred W. Hoyt, 243 Wabash Ave., Chicago, Ill.

Dr. J. Taft, northeast corner of Shillito Place and Elm St., Cincinnati, O.

These examinations are conducted in writing, and the papers written by the applicants are sent to Ann Arbor to be passed upon by the Faculty of the College.

In order to receive credit for a full course, students must enter within ten days after the opening of the college year. Students are allowed to enter, however, at the beginning of the second semester (February 11, 1901) and receive credit for a half-year's work. It is very important that first-year students be present promptly at the opening of the year.

ADMISSION TO ADVANCED STANDING.

Persons having qualifications for admission to this college, and having studied dentistry in other recognized schools for at least one year, may be admitted to advanced standing after having passed a satisfactory examination on all the studies which have already been pursued by the class to which they seek admission.

Students who have completed one or more years of the course in the Department of Medicine and Surgery (page 168) or other medical college of equal rank, are allowed credit toward graduation for so much of the required course in dentistry as was included in their medical course. All students so admitted will be held to the completion of at least two years of work in the College of Dental Surgery before being recommended for graduation.

ASSIGNMENT OF SEATS.

Students are assigned seats in the lecture room, places in the dental laboratory, and chairs in the operating room, in the order in which they matriculate and register; and each student is expected to occupy the places so selected during the session.

COURSE OF INSTRUCTION.

In the arrangement of the course of study it is the aim to make it such as will meet the requirements of the student and the expectation of the profession, and will secure the greatest benefit to the public. To accomplish these objects, and to accommodate and benefit those students who desire a thorough dental education, the course of instruction is made to cover three college years of nine months each. The course thus affords time for the teaching and study of subjects not generally taught; and especially does it give time for thorough work in the laboratories.

In the arrangement of the work a graded course of study is combined with repetition of such lectures only as will avoid the confusion incident to the presentation of too many parts of the general subject to the mind of the student at an early period of his studies, and also obviate the objection of dismissing one part of a subject before its relations to other parts can be seen and appreciated.

SCHEDULE OF STUDIES.*

FIRST YEAR.

FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
Osteology and Anatomy,	51
General Chemistry,	85
Prosthetic Dentistry,	17
Dental Laboratory Work,	425

SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
Organic Chemistry,	68
Descriptive Anatomy,	51
Histology (lectures),	68
Prosthetic Dentistry,	17
Dental Laboratory Work,	425

SECOND YEAR.

FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
Physiology,	85
Bacteriology,	68
Operative Principles and Materials,	17
Prosthetic Dentistry,	17

* The column of hours gives the total number of hours of work required for each semester.

SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
Dental and Comparative Anatomy,	34
Physiology,	85
Operative Principles and Materials,	17
Prosthetic Dentistry,	17

Laboratory Work in Second Year.

The following subjects make a continuous course of laboratory instruction running through the year. The hours for laboratory work must be chosen at the opening of the year, preference being allowed in the order of registration.

<i>Subjects.</i>	<i>Hours.</i>
Regulating and Porcelain Technique,	120
Dissection,	240
Histological Laboratory Work,	120
Qualitative Chemistry,	240
Operative Technique,	170

THIRD YEAR.

The Courses extend through the entire year.

<i>Subjects.</i>	<i>Hours.</i>
Dental Surgery and Pathology,	90
Oral Surgery,	68
Dental Medicine,	90
Orthodontia and Oral Deformities,	34
Prosthetic Clinic,	340
Operative Dentistry,	34
Operative Clinic,	680
Laboratory Course in Oral Surgery (optional).	

DESCRIPTION OF COURSES.

Anatomy is studied didactically and practically. A full course on general osteology is taken with the medical classes in the Department of Medicine and Surgery (page 168). A special course of sixty lectures is given to students of dentistry on the anatomy of the head, face, neck, thorax, abdomen, and their contained viscera, and on the nervous and vascular systems: from six to eight lectures are given on the extremities and pelvic region. In practical anatomy the same regions are dissected, independent of the medical classes, though under the same demonstrator. The most careful consideration is given to the parts of immediate concern to dental students. The didactic course is taken during the freshman year, and the practical course at the beginning of the junior year. By this arrangement the practical course is more carefully done, and

serves as a review exercise to fix the subject more thoroughly in the memory. The work in anatomy also includes a course in regional dental, and comparative dental anatomy. This is in the nature of a series of quiz exercises on the technical anatomy of the face and mouth; on cutting and studying the structures of human teeth in sections; and an inspection and discussion of the characteristic differences in animal dentition. The large odontological museum, the gift of the late Professor Ford, offers exceptional opportunities for this work.

In the *histological laboratory* the student not only acquires a knowledge of the principal structures and tissues of the animal body, but also becomes familiar with the manipulation and uses of the microscope.

In *chemistry* students are required to attend lectures on general chemistry, and also to take a course in analytical chemistry with special reference to those agents or secretions that concern their future needs. A course in analysis of saliva is optional.

In dental *materia medica and therapeutics* a special course of lectures embraces the history, pharmacy, pharmacology, and therapeutics of all drugs and remedies used in the treatment of diseases occurring in dental practice, and includes a discussion of pain obtundents, local and general anæsthetics, and prophylactic remedies.

In dental *pathology and surgery* a course of lectures embraces a discussion of the various diseases which affect the teeth and mouth, and their etiology and treatment. Special attention is given to diseases which pertain peculiarly to the practice of dentistry. Illustrative cases are shown and operated on in the presence of the class. All instruments appliances, and methods that are of interest or value in this connection are exhibited and discussed.

A course of lectures on clinical *oral surgery* embraces a consideration of diseases of the mouth and associated parts that are of special interest to the dentist, but which lie more within the province of the medical surgeon for treatment. Illustrative cases are exhibited and discussed, and operations are performed before the class.

In *operative dentistry* the instruction is both didactic and practical. In the didactic course a full presentation of approved methods, appliances, and material used in filling teeth is given, together with the principles which form the basis of practice. This instruction is supplemented by practical instruction in the clinical operating room, which is under the personal supervision of the professor of operative and clinical dentistry and his assistants. Here each senior student is required to spend twenty hours a week at the chair, operating for patients, and in this way confirming the principles taught and obtaining such manipulative training as will result in desirable preparation for skilful practice.

In *prosthetic dentistry* the instruction is both didactic and practical.

In the lectures the principles involved in the construction and application of artificial dentures, crowns and bridges, regulating devices, and continuous gum and cleft-palate work are fully discussed, and such methods as have proved valuable and worthy are advocated. In the practical department each student in the second year has opportunity and is required to construct and adapt to the mouth practical dentures for the restoration of lost dental organs.

The instruction in dental mechanism embraces experimental construction of the various artificial dentures used to restore lost dental organs. Twenty-five hours a week in the first year are devoted to this work. It consists of taking impressions, making plaster models from impressions, making dies, swedging plates, grinding and adjusting teeth, soldering and finishing, vulcanizing and finishing plates, pouring and finishing cast metal, celluloid, and continuous gum plates, and constructing various styles of crowns, bridges, and regulating devices, with such instruction as will familiarize the student with the most approved methods of doing such work. The junior class devotes one hundred and twenty hours to operative technique, in which sections of teeth are made and studied, and cavities are formed in teeth outside of the mouth and filled with cement, gutta-percha, tin-amalgam, and gold.

EXAMINATIONS.

At the close of each semester all students of the first and second years are held to examinations on the required branches of their respective courses; and no student who fails to pass in two of the required branches of his course, is admitted to an advanced class during the first semester of the following year.

REQUIREMENTS FOR GRADUATION.

To be admitted to the degree of Doctor of Dental Surgery, the candidate must be twenty-one years of age, must possess a good moral character, must have devoted three years to the study of dentistry, and have passed all the examinations required in his course. Unless admitted to advanced standing, he must have attended three full years in this college. It is recommended that he attend these consecutively.

Every candidate is required to write from time to time upon the various branches of his course, and may at the discretion of the Faculty be required to prepare a thesis upon some assigned topic; he must present for inspection practical operations performed by himself in this college, and give satisfactory evidence of his skill and ability as a practitioner.

GRADUATE COURSE.

The purpose of the graduate course is to meet the requests of a continually increasing number of students for further opportunity to pursue the scientific branches of the regular college curriculum, and also to meet an often expressed wish on the part of practitioners to pursue some special scientific investigation, which has been entered upon at home, with limited resources in the way of books of reference, laboratory facilities, and apparatus, and without the aid of instructors or advisers in associated sciences.

The graduate course is open only to graduates of this college, who have made marked records in their undergraduate work, and to graduates of this and other colleges who have had at least two years of continuous practice since graduation, and who have published original articles of scientific value showing a capacity on their part for continuing such work with credit.

The course of study is independent of, and additional to, the regular undergraduate work, and embraces only such topics as will aid in training men to carry on scientific researches in subjects associated with practical dentistry, or with dentistry in its scientific aspect. As at present arranged, the work in the first semester deals principally with *materia medica*; and in the second with pathology, according to the following schedule:

FIRST SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
{ Laboratory work in Chemistry (general and organic),	100
{ or Laboratory work in Physiology, or in <i>Materia Medica</i> ,	70
Original research on some dental remedy,	200

SECOND SEMESTER.

<i>Subjects.</i>	<i>Hours.</i>
{ Laboratory work in Histology,	70
{ or Laboratory work in Bacteriology,	120
Original research on some dental disease,	200

In addition to the foregoing, each student must take at least one of the following elective studies:—general pathology, electrotherapeutics, quantitative chemical analysis, physiological chemistry, pharmacognosy, salivary analysis, general biology, dental metallurgy, or must prepare a thesis on the original research of either the first or the second semester.

The time required to complete the course prescribed for the advanced degree depends upon the diligence and capacity of the student, but at least a year's work is required in all cases.

Graduate students are required to pay the same annual fee as undergraduates, and those who have not previously been matriculated in this

University are also required to pay the usual matriculation fee. The expenses of the laboratory courses vary according to the character of the work taken.

The degree of Doctor of Dental Science (D.D.Sc.) is conferred only upon graduate students who complete the prescribed course as outlined above, or a course embracing an equivalent amount of scientific work.

FACILITIES FOR INSTRUCTION.

For general information relating to the University libraries, museums, laboratories, hospitals, and gymnasiums, see pages 24 to 37 and 177 to 184.

Among the facilities of special interest to students of dentistry the following may be mentioned.

DENTAL MUSEUM.

The dental museum is supplied with a large number of anatomical, physiological, pathological, and histological preparations, including a series illustrating dentition from infancy to the completion of the process in the adult, and the normal changes through life to old age, and also illustrative of the dental and osseous tissues. Preparations, natural and artificial, greatly facilitate the study of the nervous and vascular systems. The design is to make every practicable appliance in this direction available.

The late Professor Ford contributed his entire collection of crania and odontological specimens to this museum, making it one of the best of its kind in this country. Additions to this collection are desired, and gifts of material illustrating comparative odontology and typical or abnormal human teeth, will be gratefully received.

DENTAL LIBRARY.

A library of dental science, containing almost every known work on this specialty, including an almost complete file of every dental journal published, is shelved in the dental building, where it is accessible to all students. A finely appointed reading room is connected with the library. Twenty-four dental journals are regularly received.

LABORATORY OF MECHANICAL DENTISTRY.

This laboratory contains charcoal and coke furnaces, soldering table, rolling mill, and lathes; appliances for the various manipulations of prosthetic dentistry, such as the construction of artificial dentures in gold, continuous gum, silver, aluminum, rubber, and other bases; appliances for the regulation of teeth and for the mechanical treatment of oral deformities;

and facilities for the manufacture of instruments. The laboratory has accommodations for two hundred students at a time. Particular attention is given to the manipulation and management of the precious metals with reference to their use for dental purposes.

Each student is furnished a bench containing a drawer and cupboard with lock and key, to contain the instruments that he is obliged to furnish for the prosecution of his work. If a student has any of these instruments it would be well to bring them; but it is more desirable to defer purchasing until the advice of the instructor in the college has been secured, as it is desirable that a complete and uniform outfit should be in the possession of each student. This outfit costs about fifty dollars, and if taken care of will be a permanent investment, as the tools will all be necessary and useful in practice. These tools must be purchased at the beginning of the course, as they are required during the first as well as during the succeeding years.

DENTAL OPERATING ROOMS.

The operating rooms are large, well lighted, heated, and ventilated. The main room contains sixty operating chairs, with an extension bracket and movable table with drawers for instruments for each chair. Other rooms contain chairs and apparatus for the administration of anæsthetics, for the extraction of teeth, and for other purposes. Each student is required to supply himself with a dental engine and a full set of operating instruments; these must be purchased with the advice of the instructor, and will cost about one hundred dollars. Like the laboratory tools, they will be necessary to begin practice, and if carefully used will last many years; consequently care should be exercised in their purchase. They need not be purchased until the third year.

COURSES IN OTHER DEPARTMENTS.

Those who can command the time may also avail themselves of numerous lectures, or pursue elective studies, in the Department of Literature, Science, and the Arts (page 43); or may attend special lectures in the Department of Medicine and Surgery (page 168), such as those on gynecology and the diseases of children, or on other subjects that are important to the practicing dentist.

TEXT-BOOKS.

First Year.—*Anatomy*.—Morris; Gray. *General Chemistry*.—Freer; Remsen. *Organic Chemistry*.—Perkins-Kipping; Bernthsen. *Histology*.—Piersol; Schäfer; Klein. *Medical Dictionary*.—Gould; Thomas. *Prosthetic Dentistry*.—Essig; Richardson. *Crown and Bridge Work*.—Evans.

Second Year.—*Physiology.*—Howell; Foster; Martin. *Bacteriology.*—Fränkel; Sternberg; Vaughan and Novy. *Qualitative Chemistry.*—Prescott. *Dental Metallurgy.*—Hodgen; Essig. *Dental Anatomy.*—Black; Tomes.

Third Year.—*General Pathology.*—Ziegler; Green. *Dental Pathology.*—Marshall; Bödecker; Wedl. *Oral Surgery.*—Warren; Garretson; Tomes. *Operative Dentistry.*—Harris; Taft. *Orthodontia.*—Talbot; Guilford. *Dental Medicine.*—Gorgas; Wood; Potter.

FEES AND EXPENSES.*

Matriculation Fee.—For Michigan students, *ten dollars*; for all others, *twenty-five dollars*.

Annual Fee.—For Michigan students, *thirty-five dollars*; for all others, *forty-five dollars*.

Laboratory Expenses.—*Chemical Laboratory.*—Students are required to pay for the materials and apparatus consumed by them. The average expense for the required course is about *ten dollars*. *Histological Laboratory.*—A charge of *seven dollars* is made for material used in this laboratory. *Anatomical Laboratory.*—A charge of *ten dollars* is made for material used in dissecting.

Incidental Expenses.—A charge of *three dollars* a year is made against each student to cover the cost of supplies and equipment provided by the University. The expenses for incidentals, teeth, rubber, and other material needed in the technical courses, but not supplied by the University, are about *fifteen dollars*.

The average total expenses of a student of dentistry, including University fees, board, books, etc., for the college year of nine months, are three hundred dollars, and upward, depending on individual habits and tastes. The cost of instruments and tools, amounting to about one hundred and fifty dollars for the entire course of three years, is not included in the above estimate, for the reason that it is not properly a college expenditure, the tools being available and necessary in future practice.

To avoid embarrassment, new students should come prepared to spend during the first week about \$125, if residents of Michigan, or \$150, if not residents of Michigan, for University fees, books, and tools.

Additional information in regard to expenses may be found on pages 40 to 42.

* The Matriculation Fee and the Annual Fee must be paid in advance, and no seat will be assigned to a student until after such payment. No portion of these fees can be refunded, except by order of the Board of Regents, to students who leave the University during the academic year.

Summer School in the Department of Literature, Science, and the Arts.*

A special Announcement of the Summer School, containing further particulars than are here given in regard to the courses of instruction, etc., is published annually. Copies of this Announcement can be had by addressing Mr. James H. Wade, Secretary of the University.

The Summer School, to be known hereafter as the Summer Session of the department, is under the general supervision of an Executive Committee, of which Professor JOHN O. REED is Chairman, and Assistant Professor ERNST H. MENSEL is Secretary.

In 1900 the session opens on Monday, July 2, and continues for six weeks. Students are urged to register on the Friday or Saturday preceding the day of opening.

The corps of instruction for the session is as follows:

ISAAC N. DEMMON, LL.D., *English and American Literature.*

WOOSTER W. BEMAN, A.M., *Mathematics.*

BURKE A. HINSDALE, LL.D., *The Science and Art of Teaching.*

THOMAS C. TRUEBLOOD, A.M., *Elocution.*

JOHN C. ROLFE, Ph.D., *Latin.*

ROBERT M. WENLEY, Sc.D., D.Phil., *Philosophy.*

GEORGE HEMPL, Ph.D., *English Philology and German.*

FRED M. TAYLOR, Ph.D., *Political Economy.*

FRED N. SCOTT, Ph.D., *Rhetoric.*

* For the Summer School of Law, see page 202.

- ALLEN S. WHITNEY, A.B., *The Science and Art of Teaching*.
JOHN O. REED, Ph.D., *Physics*.
JOSEPH H. DRAKE, A.B., *Latin*.
JOSEPH L. MARKLEY, Ph.D., *Mathematics*.
MORITZ LEVI, A.B., *Spanish and Italian*.
ERNST H. MENSEL, Ph.D., *German*.
MOSES GOMBERG, Sc.D., *Chemistry*.
GEORGE O. HIGLEY, M.S., *Chemistry*.
DAVID M. LICHTY, M.S., *Chemistry*.
JOHN R. EFFINGER, JR., Ph.D., *French*.
KARL E. GUTHE, Ph.D., *Physics*.
CLARENCE L. MEADER, A.B., *Latin*.
ARTHUR G. HALL, B.S., *Mathematics*.
HERBERT J. GOULDING, B.S., *Drawing*.
PERRY F. TROWBRIDGE, Ph.B., *Chemistry*.
HERBERT H. WAITE, A.B., *Bacteriology*.
EDWIN C. ROEDDER, Ph.D., *German*.
JAMES B. POLLOCK, Sc.D., *Botany*.
SHIRLEY W. SMITH, B.L., *English*.
EUGENE C. SULLIVAN, Ph.D., *Chemistry*.
JONATHAN A. C. HILDNER, Ph.D., *German*.
CHARLES M. WILLIAMS, *Physical Training*.
CHARLES L. BLISS, B.S., *Physiological Chemistry*.
JOHN W. SLAUGHTER, A.B., B.D., *Philosophy*.
DUANE R. STUART, A.B., Instructor in the Michigan State Normal College, *Greek*.
WILBUR C. ABBOTT, B.Litt., Professor in Dartmouth College, *History*.
CHARLES A. DAVIS, A.M., Professor in Alma College, *Geology*.
WILLIAM H. MUNSON, B.S., Professor in Hillsdale College, *Zoology*.
CHARLES B. SCOTT, A.M., *Nature Study*.

GENERAL REGULATIONS.

1. Before beginning work in the school, students are required to register with the chairman of the executive committee at the office of the Dean of the Department of Literature, Science, and the Arts, and to pay their fees to the Treasurer of the University. Laboratory fees, where required, are also to be paid to the Treasurer.

2. The uniform charge for tuition for the session is fifteen dollars. In courses requiring laboratory work the additional expense varies with the character of the work and the economy of the student.

3. Teachers in public schools are admitted without charge to the courses in Nature Study, described below, even if they take no other course.

4. Each full course of study, except when otherwise specified, comprises thirty lessons, one hour each day for five days in the week.

5. Credit toward graduation with a bachelor's degree in the Department of Literature, Science, and the Arts, may be given to students regularly enrolled in the summer session, subject to the following rules and regulations:

(a) No credit is given save for work that is similar in kind to courses that are regularly offered in that Department.

(b) Credit is given only for full courses of five hours a week for the session, or multiples thereof. Exceptions to this rule may be made in the case of laboratory courses.

(c) The credit to be given for a full course of five hours a week is *two hours*,* and for multiple courses in proportion. In some courses credit for *three hours* or *five hours* may be given for proportional time and work.

(d) No student can receive more than *six hours* of credit for work done in any one session of the Summer School.

(e) All credits are reported by the several instructors to the secretary of the executive committee immediately on the close of the session.

COURSES OF INSTRUCTION.

The courses of instruction are arranged to meet the wants of several classes of students. It is supposed that a considerable proportion of the students in attendance will be teachers in high schools or academies who desire to enlarge their preparation for their special work. Students who wish to review studies preparatory to presenting themselves for examination for admission to college or university will find courses directly adapted to meet their wants. Students regularly matriculated in the University will also find courses suited to their needs.

In the description of courses given below, the terms *two hours*, *four hours*, *six hours*, etc., indicate the amount of credit to be given for the course. When no mention of hours is made it is understood that the course is not entitled to credit.

The courses offered for the session of 1900, with the names of the

* For explanation of the term, Hour of Credit, see pages 55 and 56.

instructors (so far as arranged at the time these pages go to press), are as follows:

GREEK.

1. Preparatory Greek. Mr. STUART.
Course 1 is intended for persons who have never studied Greek. It is a double course, having two recitations a day. Students taking the course are advised to take no other work during the session.
2. Rapid Reading of easy Greek. Selections from Xenophon's Hellenica. Mr. STUART.

LATIN.

1. Latin Writing. Translation of English into Latin, with collateral reading of Latin and a study of the grammar. Mr. MEADER.
2. Cicero. This course may be pursued as *2a* or *2b*.
 - 2a.* Teachers' Course. Interpretation of selected orations, with extra reading. *Two hours.* Assistant Professor DRAKE.
 - 2b.* Preparatory Reading. Assistant Professor DRAKE.
3. Virgil. This course may be pursued as *3a* or *3b*.
 - 3a.* Teachers' Course. Interpretation of the text of the Aeneid, with a study of prosody. Selections from Ovid may be substituted for the Aeneid at the option of the class. *Two hours.* Professor ROLFE.
 - 3b.* Preparatory Reading. Professor ROLFE.
4. Rapid Reading of easy Latin. *Two hours.* Assistant Professor DRAKE.
5. Roman Political Institutions. Lectures. *Two hours.* Assistant Professor DRAKE.
6. Latin Grammar and Style. Lectures, with occasional exercises in Latin writing or in the reading of inscriptions. *Two hours.* Professor ROLFE.
7. Latin Comedy. Terence, Phormio; Plautus, Captivi. *Two hours.* Mr. MEADER.

FRENCH.

1. Beginners' Course. Dr. EFFINGER.
2. Modern Prose. Rapid reading. *Two hours.* Dr. EFFINGER.
3. Advanced Course in Composition. *Two hours.* Dr. EFFINGER.

ITALIAN.

1. Beginners' Course. Grammar, reading, conversation. *Two hours.* Assistant Professor LEVI.

SPANISH.

1. Beginners' Course. Grammar, reading, conversation. *Two hours.* Assistant Professor LEVI.

GERMAN.

1. Beginners' Course. Dr. HILDNER.
2. Modern Prose. *Two hours.* Dr. ROEDDER.
3. German Composition. Advanced course. *Two hours.* Dr. ROEDDER.
4. Classic Drama. Representative dramas of Lessing, Goethe, or Schiller. *Two hours.* Dr. HILDNER.
5. History of German Literature. Lectures and assigned reading. *Two hours.* Assistant Professor MENSEL.
In Course 5 either (1) the period from the earliest times to the end of the Middle Ages or (2) the modern period will be treated, as the class may choose.
6. Middle High German and Historical German Grammar. Lectures and recitations. *Two hours.* Assistant Professor MENSEL.
7. The Teaching of Modern Foreign Languages. *Two hours.* Professor HEMPL.
8. If there is sufficient demand, a course will be given by Assistant Professor MENSEL either in (1) recent German drama or (2) in readings suitable for high-school use, and arranged with special reference to the needs of teachers.

ENGLISH PHILOLOGY AND GENERAL LINGUISTICS.

1. Spoken English, with special reference to American English. A study of colloquial English as distinguished from the English of books and artificial speech, with the object of determining some of the principles governing speech-mixture and the formation of dialects. *Two hours.* Professor HEMPL.

ENGLISH AND RHETORIC.

1. Paragraph Writing. Text-book: Scott and Denney. *Two hours* Mr. SMITH.
2. Theme Writing. Essays, lectures, collateral reading. *Two hours.* Mr. SMITH.
3. Teachers' Courses in Rhetoric and Composition. It is recommended that the two courses, 3a and 3b, be taken together.
 - 3a. Analysis of English Prose. Text-book: Genung's Rhetorical Analysis. *Two hours.* Professor SCOTT.
 - 3b. Methods of Teaching Rhetoric and English Composition. Lectures, reading, discussion. *Two hours.* Professor SCOTT.
4. The Teaching of English Literature. *Two hours.* Professor DEMMON.
5. American Literature. *Two hours.* Professor DEMMON.

ELOCUTION AND ORATORY.

1. Exercises in vocal culture and action; elements of quality, force, pitch, and time. *Two hours.* Professor TRUEBLOOD.
2. Shakespearian Reading. Two plays. *Two hours.* Professor TRUEBLOOD.

HISTORY.

The courses to be offered in history will be found in the special Announcement of the school.

PHILOSOPHY.

1. General Introduction to Philosophy. Lectures, reading, discussions, two theses. *Two hours.* Professor WENLEY.
2. Social Philosophy, with special reference to the bearing of ethics upon civics. Lectures, reading, discussions, one thesis. *Two hours.* Professor WENLEY.

PSYCHOLOGY.

1. Introduction to General Psychology. Lectures, reading, discussions. *Two hours.* Mr. SLAUGHTER.
2. Teachers' Course. Lectures, reading, discussions. *Two hours.* Mr. SLAUGHTER.

THE SCIENCE AND ART OF TEACHING.

1. School Superintendence and Moral Training. Lectures and reading. *Two hours.* Professor HINSDALE.
2. The Art of Study. *Two hours.* Professor WHITNEY.

POLITICAL ECONOMY.

1. Elements of Political Economy. Text-book and lectures. *Two hours.* Professor TAYLOR.
2. Money and Banking. Text-book and lectures. *Two hours.* Professor TAYLOR.

MATHEMATICS.

1. Elementary Geometry. Text-book: Beman and Smith's New Plane and Solid Geometry. Mr. HALL.
2. Elementary Algebra. Text-book: Beman and Smith's Elements of Algebra. Mr. HALL.
3. Trigonometry. Text-book: Lyman and Goddard's Plane Trigonometry. *Two hours.* Mr. HALL.
4. Algebra. Text-book: Wentworth's College Algebra. *Two hours.* Assistant Professor MARKLEY.
5. Analytic Geometry. Text-book: Tanner and Allen's Analytic Geometry. *Four hours.* Assistant Professor MARKLEY.

6. Geometry and Algebra for Teachers. *Two hours.* Professor BEMAN.
7. Calculus. Text-book: Osborne's Differential and Integral Calculus. *Two hours.* Professor BEMAN.
8. Differential Equations. Text-book: Johnson's Differential Equations. *Two hours.* Professor BEMAN.

Of Courses 7 and 8 but one will probably be given, that for which the largest number of students apply.

PHYSICS.

1. Physics for Admission to the University. Dr. GUTHE.
2. Teachers' Course in General Physics. Lectures and recitations Professor REED.
3. Laboratory Work. *Two or three hours*, as arranged with instructor Dr. GUTHE.
4. Graduate Course. Laboratory work and reading for students qualified to enroll for an advanced degree. The course will be adapted, in some measure, to suit the needs and purposes of the individual student. Professor REED.
5. Electrical Measurements. Laboratory work and recitations. Text-book: Carhart and Patterson. *Three hours.* Dr. GUTHE.

CHEMISTRY.

Students will be accorded the full privileges of the laboratories each day from 8 to 12 A. M. and from 2 to 5 P. M. The laboratory expenses vary from \$1.00 to \$1.75 a week, proportionately to the time spent, the course chosen, and the economy used.

GENERAL CHEMISTRY.

1. General Inorganic Chemistry. Lectures and recitations. *Four hours.* Mr. HIGLEY.
2. Laboratory Work in General Inorganic Chemistry. *Two, three, four, five, or six hours*, as arranged with instructor. Mr. LIGHTY.
3. Laboratory Work in Advanced Inorganic Chemistry. *Two to six hours*, as arranged with instructors. Mr. HIGLEY and Mr. LIGHTY.

ANALYTICAL, ORGANIC, and TECHNICAL CHEMISTRY.

4. Qualitative Analysis. Laboratory work and recitations. *Four, five, or six hours.* Dr. SULLIVAN.
5. Beginning Quantitative Analysis. Lectures and recitations *Four to six hours*, as arranged with instructor. Dr. SULLIVAN
6. Organic Chemistry. Lectures and recitations. *Two hours* Assistant Professor GOMBERG.

7. Organic Preparations. Laboratory work and reading. *Two to six hours*, as arranged with instructor. Assistant Professor GOMBERG.
8. Organic Analysis. Analysis of oils, soaps, varnishes, alkaloids, foods, etc. *Two to six hours*, as arranged with instructor. Mr. P. F. TROWBRIDGE.
9. Technical Chemistry of Beet-Sugar. Lectures and laboratory work. *Three to six hours*, as arranged with instructor. Mr. P. F. TROWBRIDGE.
10. Recent Theory bearing upon Analytical Chemistry. Lectures. *One hour*. Dr. SULLIVAN.

PHYSIOLOGICAL CHEMISTRY AND BACTERIOLOGY.

1. Physiological Chemistry. *Six hours*. Mr. BLISS.
2. Bacteriology. *Six hours*. Mr. WAITE.

NATURE STUDY.

The courses in nature study will be given in the second half of the session, and in them the relation of nature study to other school work will be emphasized.

1. Plant Study. Germination; tree study; common large-flowered wild and cultivated plants. Mr. C. B. SCOTT.
2. Animal Study. Birds; common domestic animals; insects; snail; etc. Mr. C. B. SCOTT.
3. Earth Study. Common minerals and rocks; field-lessons in outdoor physical geography; evening lessons on stars and planets. Mr. C. B. SCOTT.

GEOLOGY.

1. Historical Geology. Text-book: LeConte's Elements, 4th edition, pages 290-646. Professor C. A. DAVIS.
2. Physical Geography. Text-book: Tarr. Professor C. A. DAVIS.

BOTANY.

1. General Morphology and Physiology of Flowering Plants. Equivalent to the botany required for admission to the University. Dr. POLLOCK.
2. Algæ and Fungi. This course corresponds in scope with the botanical part of Course 1 in general biology, described on page 98. *Three hours*. Dr. POLLOCK.
3. Plant Physiology. Lectures and laboratory work. *Two hours*. Dr. POLLOCK.

ZOOLOGY.

1. General Zoology. A study of typical species of animals, with reference to structure, function, development, and relationship. Laboratory work, lectures, and recitations. *Three hours.* Professor MUNSON.

Course 1 is the equivalent of the zoological portion of Course 1 in general biology, described on page 98.

2. Teachers' Course. Work on local fauna, in field and laboratory, and with text-book. *Two hours.* Professor MUNSON.
3. Teachers' Course. Technique. Methods of collecting, preserving, and preparing for microscopic study the forms most commonly used in laboratory work. *One hour.* Professor MUNSON.

DRAWING.

1. Geometrical Drawing. *Three hours.* Mr. GOULDING.
2. Freehand Drawing (elementary). *Three hours.* Mr. GOULDING.
3. Freehand Drawing (advanced). *Three hours.* Mr. GOULDING.
4. Freehand Lettering. *Two hours.* Mr. GOULDING.
5. Descriptive Geometry. Text-book: Church's Descriptive Geometry. *Four hours.* Mr. GOULDING.

PHYSICAL TRAINING.

1. Gymnastics for schools and for individuals. Practical and theoretical instruction in the use of apparatus in single movements and in groups. Mr. WILLIAMS.
2. Physical Examinations. Instruction in method of taking measurements and of plotting charts. Mr. WILLIAMS.

Fellowships and Prizes.

THE following paragraphs were inadvertently omitted from the section on Fellowships and Scholarships (pages 117 to 119).

PETER WHITE FELLOWSHIP.

Provision for a Fellowship in American History for the year 1899-1900, with an income of four hundred dollars, has been made by Honorable Peter White, of Marquette. The present holder of the fellowship is Harlow Stafford Person, Ph.B.

DEXTER M. FERRY BOTANICAL FELLOWSHIP.

Provision for a Fellowship in Botany for the year 1899-1900, with an income of five hundred dollars, has been made by Mr. Dexter M. Ferry, of Detroit. The present holder of the fellowship is John William Tell Duvel, B.S.

GOOD GOVERNMENT CLUB PRIZE.

The income of the sum of five hundred dollars, presented to the Board of Regents by the Good Government Club of the University, is available, under the conditions of the gift, as a prize "for the best essay on some theme connected with the subject of good government."

The Professor of Political Economy, the Dean of the Department of Law, and the Professor of History are a committee to choose themes for the essays and to award the prize.

List of Graduates of 1899.*

DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

BACHELOR OF LETTERS.

Mary Anderson,	John Loeffler,
Frank Jones Arbuckle,	Ray James McColl,
Jennie Bogner,	William Lyman Mack,
Charles John Borchardt,	Agnes MacNaughton,
Frank Egbert Bryant,	Maud McVoy,
Bertha Grinnell Buell,	Effie Clare Mann,
Alice Gertrude Burdsal,	Lida Chenoweth Martin,
Mary Ruth Butts Carson,	Charles William Mickens,
Bessie Isabella Cole,	Jessie Curry Mighell,
† George William Cottrell,	Fanny Theresa Nichols,
Levi Orville Davis,	Flora Estelle Parker,
Charles Fisher Delbridge,	Olive Blanche Phillips,
† Louise Rosseel Gibbs,	† Mary Lyle Reid,
Alice Jovita Hickey,	Rodolphe Ransom Reilly,
Flora Elsie Hill,	Frederick Euøene Rheinfrank,
Percy Albert Himes,	Irving Washington Riegelman,
Charles Benjamin Hole,	Clifford Griffith Roe,
Carl Henry Ibershoff,	Harley Halsted Seeley,
Fred Lewis Ingraham, LL.B.,	Arthur Dickey Stansell,
May Selma Jaehnig,	Wellington D. Sterling,
Percy Wall Jones,	James Stuart Taylor,
Albert Henry Keith,	Nellie Thomson,
Elsa King,	Carrie L. Tower,
Horace Kitchel,	Henry Tupper,
James Lawrence Kocher,	Ethelberta Williams,
John Stuart Lathers,	Ida May Wimer,
Mary Eleanor Lennon,	Arthur Robert Wistrand.

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*The List of Graduates contains the names of all persons on whom degrees were conferred during the year 1899. A dagger (†) indicates that the degree was conferred at some other time than Commencement.

BACHELOR OF SCIENCE.

(IN BIOLOGY.)

Arthur Harold Benefiel,	Thomas Alvin Neal,
Earle Mason Brown,	Paul Oliver.
George Edwards Fay,	

5

BACHELOR OF SCIENCE.

(IN CHEMISTRY.)

Luther Clarendon Carpenter,	George E. Rogers,
Edmund Claude Champion,	Roy Burnett Smith,
Ralph Hugh Page,	Carl Sundstrom.

6

BACHELOR OF SCIENCE.

Francis Leon Bauer,	Charles Wolcott Kent,
Philip Albert Bennett,	Evangeline Lodge Land,
Stewart Henry Burnham,	Ellen Hart Littlefield,
Grace Chloe Cartwright,	Henry Harrison Lovell,
Lelia Merrill Childs,	Leila Knickerbocker McCotter,
Alphonso Morton Clover,	Herbert Jay McCreary,
Harold Dunbar Corbusier,	Samuel Ottmar Mast,
Walter Galpin Curtis,	Louallen Frederick Miller,
Lydia Maria Adams DeWitt, M.D.,	Howard Daniel Minchin,
Stephen Arnold Douglass,	Grace Darling Peele,
Ida Mae Durkee,	Frank Ira Post,
Estelle Helen Fox,	Winnifred Josephine Robinson,
Mabel Caroline Gale,	Ruth Louise Smith,
Herbert Charles Gore,	Willard John Stone,
John Wistar Harris,	Anna Zita Sullivan,
Royal Barnhart Hovey,	Nelson Walter Thompson,
Fred Joseph Johnson,	Grace Belle Ward,
Demeter Kalinoff,	Milton W. Wimer.
Keith Kennedy,	

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BACHELOR OF PHILOSOPHY.

Florence Lavinia Abbott,	George Neil Blatt,
Cuthbert Clarke Adams,	Mary Arvilla Brewer,
Guy Henry Albright,	Mary Louise Bunker,
Isabel Adelaide Ballou,	Mary Agnes Burton,
† James William Bannon,	Margaret Sprague Carhart,
Thomas Beath, Jr.,	Martin Henry Carmody,
John Chester Bills,	Helen Frances Clute,
Roswell Fairchild Bishop,	William Alfred Comstock,

Ruie Ann Connor,
Henry Hobart Corwin,
Hiram Charles Daley,
Howard Richard Daniels,
Mary Margaret Ehrhorn,
William Richard Fieldhouse,
Helen Daisy Fortaine,
George Washington Furrey,
Lillian Ellen Hadley,
Ida Christine Harbeck,
William Benson Harrison,
Kate Healy,
Irma Ann Heath,
Henry Heitmann,
Harry Patterson Herdman,
Eugenia Hobbs,
Cecil McKee Jack,
† Harriet Edith Jenkinson, as of
the Class of 1898,
Helen Louise Kimlin,
Charlotte Mendell Leavitt,
Lilabel Adda Lemon,
James Galbraith McHenry,
Nellie McKay,
Sebern Sylvester McVay,
Mary Estelle Marshall,

Albert Taylor Mills,
† Charles Clements Morris,
Paul Moses,
Clifford Lyman Niles,
Mary Elizabeth O'Connor,
Joe Carlos Osburn,
Harlow Stafford Person,
Helen May St. John,
Louise Shepard,
Martha Anne Slater,
Evelyn Mary Smith, B.L., *Hillsdale*
College,
Ina Pamela Taylor,
T. Letitia Thompson,
Jefferson Gage Thurber,
Clara Turner,
Edith Augusta VanKleeck,
William Vought,
Frederick Rice Waldron,
May Walmsley,
Clyde Irvin Webster,
Hugh White,
Matthew Beale Whittlesey,
Herbert Orlando Wilcox,
Nellie Wilcox,
Martha Elizabeth Wyant.

66

BACHELOR OF ARTS.

Mary Ella Abbey,
Marguerite Rose Ascher,
Arthur Frederick Ashbacher,
Eliza Jane Austin,
Anna Morrell Barnard,
Winifred Ernestine Beman,
Cora Louise Bodwell,
Josephine Bowen,
Mabel Mary Brown,
Amelia Louise Carey,
Charles Dean Cool,
Edwin Alfred Davis,
Alice Mabel Donnelly,
John Henry Ehlers,
Grace Sarah Flagg,

Wille Alvin Forward,
James Leslie French,
William Joseph Guthrie,
Florence Slocum Hall,
Elizabeth Sheldon Hawley
Leonard Counsellor Honesty,
Winifred Alice Hubbell,
Arthur Scott Hudson,
Harry Rogers Hurlbut,
Arthur Mastick Hyde,
Burton Branch Johnson,
Rae Harman Kiteley,
Eva May Locke,
Archibald Harold McMillan,
André George Marion,

Frances Winifred Miller,	Francis Morley Stead,
Genevieve Elizabeth Mills,	Maude Hayes Thayer,
Paul Broadley Moody,	Harry Conrad Thurnau,
Laura Moore,	Lila Turner,
Charles Rufus Morey,	LaRue Van Hook,
Marion Relief Nims,	Mabel Rebecca VanKleek,
John Noordewier,	Henry Van Slooten,
Gustavus Adolphus Ohlinger,	Lisla Alice Van Valkenburg,
George Fred Paul,	Gertrude Elisabeth Vaughn,
Frances Lillian Petit,	Leonard D'Ooge Verdier,
Nancy Seymour Phelps,	Bertha Idell Vincent,
Nellie Fuller Rice,	Beulah Stone Weeks,
Charles Augustus Riegelman,	Jennie Mabel Whittemore,
Joseph Wright Robinson,	Roscoe Mark Wood,
Sadie P. Ryan,	Greta Belle Young,
Lucie Abigail Sill,	Theodore Zbinden.

MASTER OF LETTERS.

Anna Mary Baker, B.L.,	Hannah Emily Keith, B.L.
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MASTER OF SCIENCE.

Lewis Oliver Atherton, B.S., <i>Albion College,</i>	Henry William Hess, B.S., William Hugh Hess, B.S., Frances Hinkley, B.S.
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MASTER OF PHILOSOPHY.

Oscar Reiff Myers, Ph.B.

MASTER OF ARTS.

George Henry Allen, A.B.,	Lambert Lincoln Jackson, A.B.,
Lewis Clinton Carson, A.B.,	Stephen Herbert Langdon, A.B.
A.B., <i>Harvard University,</i>	Clement Charles Lemon, A.B.,
Christian Frederick Gauss, A.B.,	<i>Indiana University,</i>
Walter David Hadzsits, A.B.,	John Hancock McClellan, A.B.,
†Parker Sedgwick Halleck, A.B.,	Norman King McInnis, A.B.,
<i>Colorado College,</i>	May Cecil Ryan, A.B.,
Alice Sarah Hussey, A.B., <i>Vassar College,</i>	Henry Ormal Severance, A.B.,
	Hudson Sheldon, A.B.,
	Loura Bayne Woodruff, A.B.

DOCTOR OF PHILOSOPHY.

Edwin DeBarr, Ph.B.,	Ella Adelaide Knapp, A.M.,
John Black Johnston, Ph.B.,	Paul Ingold Murrill, M.S., <i>State College of Kentucky.</i>

DEPARTMENT OF ENGINEERING.

BACHELOR OF SCIENCE.

(IN ELECTRICAL ENGINEERING.)

James Chivis Armstrong,	Lewis Glasgow Howlett,
Norwood Brayman Ayers,	Edwin Adolphus Hughes,
William Porter Baker,	William Leasure Kimmel,
James Rowland Bibbins,	Charles Augustus LaFever,
Burt J. Denman,	Ernest Lunn,
John Hathaway Dressel,	William Meek McKee,
George Herbert Gibson,	John Theodore Mountain,
Harmon Augustus Harris,	Ard Ezra Richardson,
Sanford Frank Harris,	Cary Davis Terrell,
Milton Charles Hartman,	Bertram DeWitt Wilber,
Clinton Jerome Hixson,	Arthur Bryant Wood.

BACHELOR OF SCIENCE.

(IN MECHANICAL ENGINEERING.)

Emanuel Anderson,	James LeGrand Horth,
† James Chivis Armstrong,	Augustus Joseph Mayworm,
Frederic Everart Arnold,	William Lincoln Miggett,
Joseph Aldrich Bursley,	David Nathaniel Rosen,
David Fernando Castilla,	James Thorpe St. Clair, B.S.,
William Griswold Chesebrough,	Frank Trott,
James Walter Clift,	Charles Herman Weideman,
William Lee Cooper,	William Roe Weidman,

Clarence Wright Whitney.

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BACHELOR OF SCIENCE.

(IN CIVIL ENGINEERING.)

John Walter Frink Bennett,	Frederick Ruthrauff Hoover,
Edwin Warren Conable,	Clarence Warren Noble,
Walter Turney Curtis,	Wellington Roberts,
Bartlett Chase Dickinson,	Arthur Gilbert St. John.
Orra Emmet Heffebower,	

9

MASTER OF SCIENCE.

Frank Noble Savage, B.S.

1

CIVIL ENGINEER.

† Clarence Thomas Johnston,	Gardner Stewart Williams, B.S.,
† Julius Kahn, B.S.,	Silas Hiram Woodard, B.S.

4-53

DEPARTMENT OF MEDICINE AND SURGERY.

DOCTOR OF MEDICINE.

Florence Elizabeth Allen,	Walter Elmo Griffin,
Miranda May Allen,	William Page Harlow,
Alfred Wickham Balsley,	Downey Lamar Harris,
Frances Elizabeth Barrett, B.S.,	Irma Irene Heller,
<i>Kalamazoo College,</i>	Levi St. John Hely,
Lester Hayes Beals, A.B.,	Willard Hunter Hutchings, B. L.,
Lena Adell Benjamin,	Herbert Elias Kelly,
Philip Daggett Bourland, B.S.,	LeRoy Wendell King,
Robert Collyer Bourland, A.B.,	Cabot Lull, Jr.,
Samuel Robert Boyce, Ph.C.,	Theodore Charles Lyster, Ph. B.,
Isabel Agnes Bradley,	Calvin Fenwick McDowell,
Frederick William Brown, B.S.,	Mary Crouse McKibbin,
<i>Bucknell University,</i>	Jackson Lee Martin,
Robert Clayton Buck,	Maude Ethelyn Burt Martin,
John Everett Burnette,	Elihu Arthur Martindale, Ph. B.,
James Francis Canavan,	<i>Hillsdale College,</i>
Roy Bishop Canfield, A.B.,	William Hampton Matchett,
Daniel George Castell,	Clarence Warren Mehlihop,
Oscar Elias Chase,	John Josiah Mersen, A. M., <i>Hope</i>
Edwin M. Chauncey,	<i>College,</i>
Clarence George Clark,	William Robert Morrison,
Willis Gurdon Cook, B.S.,	Martin Alvin Mortensen,
Harold Dunbar Corbusier,	William Daniel Mueller,
John DeLamater Covert,	Hiram Winnett Orr,
Galen Greenfield Crozier, B.S.,	Jesse Obed Parker,
William Ralph Cunningham,	John Leon Parker, B.S.,
Arthur James Dresser, B.S., <i>Dart-</i>	Emma Pearson,
<i>mouth College,</i>	Harvey Newton Peck, B.S., <i>Michi-</i>
Amos Driver,	<i>gan Agricultural College,</i>
William Sylvio Durand,	John Ross Petty,
Halle Laura Ewing,	Charles Banning Porter,
Albert Douglas Foster,	William Gilbert Povey, B.L.,
Raynor Spalding Freund,	Floyd Hamilton Randall, B.S.,
Stuart Eugene Galbraith, B.L.,	William Bernard Richmond,
Conrad Georg, A.B.,	Elizabeth Pond Rindlaub,
Milton Lowrie Glenn,	Francis Albert Scott,
James Gostanian,	Joseph Pearle Seale,
George Frank Greenleaf, Jr.,	Joseph Sill, A.B.,
Ovidus Arthur Griffin, B.S., <i>Fayette</i>	Bert Granville Snow, B.S., <i>Northern</i>
<i>Normal University,</i>	<i>Indiana Normal University,</i>

Andrew Lester Swinton, B.S.,	Alanson Weeks,
Szymon Szudrawski,	Reid A. White,
Wesley Ewing Taylor, B.S.,	Ross Chauncey Whitman, A.B.,
Clarence A. Traphagen,	Alden Humphrey Williams,
Edward Camillo Van De Walker,	Mary Moore Wolfe, A.B., <i>Bucknell</i>
Aart Van Westrienen,	<i>University,</i>
Felicie von Autenried,	Charles Martin Wood,
Frank Stanley Wasielewski,	Frederick Thompson Wright, A.B.,
George Frank Young.	88

DEPARTMENT OF LAW.

BACHELOR OF LAWS.

Basil Burgess Adams,	William Henry Caley,
† Bertrand Francis Aldrich,	Daniel Dwyer Campbell,
Peyton Edmond Alexander,	José Tomas Canales,
John Curtis Ammerman,	Joseph Knight Carey,
Clifford Burnham Anderson,	John Andrew Cashel,
Ray Nelson Anderson,	Edward D. Caskey,
John Arbenz, Jr., A.B., <i>West Vir-</i>	Edward Henry Cassey,
<i>ginia University,</i>	Arthur Francis Chapman,
Larson Harvey Arends,	Harry Landon Chapman,
Louis Selk Arnold,	William Carlton Chase,
Benjamin Miller Austin,	Charles James Napoleon Chernoch,
Oscar Otto Bader,	Albert H. Christenson,
Verne Wade Badgley,	Percy Clarke Church,
Frederick Charles Ballard, A.B.,	Henry Cottman Churchman,
James Alfred Bardin,	Hazlett Norton Clark,
Albert Raymond Barnes,	Henry Tefft Clarke, Jr., Ph.B.,
Richard Marshall Barnhart,	<i>University of Chicago,</i>
Joseph Milton Barr,	Frederick William Backus Cole-
Charles Sumner Beardsley,	man, A.B.,
Chester Leigh Benedict,	Harry Collison,
Warren Berkey,	Harley June Cortright,
George Estal Bielby,	Louis Convers Cramton,
William James Bigger, Jr.,	Clifford Waldorf Crandall, B.S.,
Frederic Henry Bowers,	<i>Adrian College,</i>
Harold Martin Bowman,	Herman Wenger Danforth,
Bert John Bradner, B.L.,	Daniel Edward Dannenberg,
George Corrington Brainerd,	Clarence Newton Davidson,
Frank William Brown,	Charles Pugh Davis, B.L.,
Charles Mumford Bush,	Mervin Day, B.S., <i>Ohio Nor. Univ.</i>

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- | | |
|--|---|
| Thomas Roland Dean, A.B.,
<i>State College of Kentucky,</i> | Joseph Gordon Hamblen, Jr., |
| David Francis Dillon, A.B., <i>Tufts</i> | Samuel Alain Harper, |
| <i>College,</i> | George DeWitt Harris, |
| Thomas Dooling, | Frederic Harry, |
| Myron Elmer Douglas, | John Michael Haverty, |
| Harry Brandt Draa, | Albert C. Healy, |
| George Julius Dreiske, | Frederick Willard Heatherly, |
| Frank Gifford Drenning, B.S., | Ernest John Heinze, |
| <i>Washburn College,</i> | James Madison Hervey, |
| Jacob D. Duback, LL.B., <i>Uni-</i> | Horace H. Hess, |
| <i>versity of Oregon,</i> | Henry Clinton Hill, A.B., <i>Bow-</i> |
| Robert Mack Dye, | <i>doin College,</i> |
| Thomas Boyd Dysart, | James Ralph Hogg, |
| Thomas Edwards, Jr., | Lemuel Homer Hole, |
| John Edward Egan, | Cornelius Nicholas Hollerich, |
| William David Ellsworth, | Robert Edward Hyde, |
| Travis Elmore, | Orville Kiger Jones, |
| Harold Hunter Emmons, A.B., | William Kehoe, |
| Joseph John Ethier, | Martin Van Kellogg, |
| Thomas Leon Everett, | Paul Courtland King, |
| Frank Archibald Fairburn, | Gerrit William Kooyers, |
| Edward Richard Feckenscher, | Marsh Euen Lambert, |
| Harry Anthony Fenton, A.B., | Cary Dayton Landis, |
| <i>Miami University,</i> | William Joe Lanier, A.B., <i>Bethel</i> |
| Oren Henderson Fisher, LL.B., | <i>College,</i> |
| <i>University of Indianapolis,</i> | William James Larmour, |
| Arthur Lyle Fitch, | Mortimer Ben Levy, |
| Leo Troy Flansburg, | Moses Montefiore Levy, |
| George Preston Fogle, B.S., | John H. Lewis, Jr., |
| <i>Georgetown College,</i> | Albert D. Leyhe, |
| James Milton Fuller, | Almon Henderson Linn, |
| Arthur William Ganschow, | William David Lloyd, |
| Winfred Sutton Gilbert, | Archer Frederick Lowe, |
| William John Gillett, | Henry Cornelius Lund, |
| Harry Leith Goodbread, | Hilliard Graham Lyle, |
| Edwin Charles Goddard, Ph.B., | William Lee McConnell, B.S. |
| Charles Coy Green, | <i>Westminster College,</i> |
| Leech Agnew Grove, A.B., <i>Lake</i> | Edward McCormack, |
| <i>Forest University,</i> | William George McCune, |
| Wilson Benjamin Haight, | Charles F. McDaniel, |
| Benjamin Howard Halstead, A.B., | Francis Thomas McDonald, |
| <i>Indiana University,</i> | John Gaily McKelvy, |
| | Milton James McVean, |

Allen Clare Malloy,
 Carl Edgar Mapes, A.B.,
Olivet College,
 Fred Byron Marshall,
 Thomas Jackson Marshall,
 John Aaron Matthews,
 Stanley M. Matthews, B.L.,
 Webb Perfet Matthews,
 Harold Cassius Mendelson,
 Fredd Rial Miller, A.B., *Hills-*
dale College,
 John Oliver Miller,
 William Ray Moss,
 Edwin Jacob Mosser, A.M.,
Muhlenberg College,
 Samuel Isaac Motter,
 Frank Leslie Mulholland,
 Warren Mullett,
 Elton Robert Nellis,
 Gustave Nelson,
 Walter Harper North, A.B.,
Hillsdale College,
 Hartwell Nowell,
 William Richard Oates,
 †Thomas J. O'Brien, as of the Class
 of 1865,
 William John O'Brien,
 Frank Milon Orem,
 John Wallace Paul,
 James Shanks Perry,
 Elmer Norman Peters,
 Earl Francis Phelps,
 Fred Edgar Phillipson,
 John Paul Pierce,
 William Edward Rafferty,
 Henry Eber Randall,
 Fred Morton Raymond,
 Joseph Lilly Reed,
 Morris Houghton Reed, A.B.,
Yale University,
 John Wilkins Reynolds, A.M.,
Willamette University,
 Turner Samuel Rickart,

Harry Rickel,
 Harry Warren Robinson,
 Louis Leslie Robinson,
 Robert Edward Robinson,
 Charles Ernest Roblin,
 George Henry Rosenthal,
 Burton Edward Ross,
 Herbert Walter Runnels,
 George Frederick Ruppe,
 Fred Russ,
 Sigmond Sanger,
 Eugene Saunders,
 Andrew Jackson Sawyer, Jr.,
 Harry Garr Schock, A.B.,
 Edward Schreiner,
 Philip Walter Seipp,
 Lisle Shanahan,
 Chester Delbert Sharp,
 Frank Gray Shaver,
 Frank Wiley Shepherd,
 Frederic Royal Sherman,
 Earnest Augustus Skinner,
 Harold Rainey Small,
 Ernest Clarence Smith, A.B.,
Olivet College,
 George Harris Smith,
 Hervey Montgomery Smith, A.B.,
 Robert Abram Smith,
 Wallis Craig Smith,
 Custer Snyder, A.B., *Scio College,*
 Ellis Gary Soule,
 Orson Pratt Soule,
 J. Branch Stocking,
 Morgan Strong, LL.B., *Cornell*
University,
 Justin Lovell Sutherland,
 Henry Smith Tanner,
 Joshua Charles Taylor,
 Walter Dudley Tipton,
 Frederic Lawrence Travers,
 Leo Clyde Tuck, B.S., *Napa Coll.,*
 Abraham Joseph Ullman,
 Robert R. Wade,

Andrew Josiah Walrath,	Carl Victor Wisner,
Roy Milton Watkins,	Herbert Dudley Witherell,
Charles Henry Watson,	Lucerne Austin Wittenmyer,
Harold Butler Wetmore,	William Frederick Wolt,
Roland Dare Whitman, A.B.,	Alphonso Calvin Wood, A.B.,
George Culver Wilson,	<i>Tri-State Normal College,</i>
LeRoy Allen Wilson, B.S., <i>Mich</i>	Isidor Ziegler,
<i>Agr. Coll.,</i>	Forest Vishua Zimmer, B.S., <i>Cent-</i>
Mahlon Egbert Wilson,	<i>tre College.</i>

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MASTER OF LAWS.

Colin Percy Campbell, LL.B.,	George Kingsley, Jr., LL.B.
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SCHOOL OF PHARMACY.**PHARMACEUTICAL CHEMIST.**

John Newton Adams,	Ralph Hicks,
Walter Stephen Brooks,	Philip Kephart,
Lavern Otis Cushing,	†Carl Metzger,
Charles Anton Duerr,	†Olney Ray Morse,
Fred Rowland Dunning,	Charles Bert Pettibone,
†George Eckel,	Ernest Tracy Pettis,
Oscar Henry Haarer,	Elmer Albert Phillips,
Jessie Graham Hall, A.B., <i>Wellesley</i>	George Rogers,
<i>College,</i>	James Clayton Rusterholtz,
Herbert D. Harrington,	Frank Philip Seabury,
Harry Cook Hewitt,	Paul George Seibert,
Clinton Whitney Hibbard,	Leonard Fred Steenman,
Oscar Charles Wheeler.	

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HOMŒOPATHIC MEDICAL COLLEGE.**DOCTOR OF MEDICINE.**

Ida Catura Coler, M.D., <i>Baltimore</i>	Tisdale Sartoris Walker,
<i>Woman's Medical College,</i>	†William Rudolph Wegert, M.D.,
Robert Lloyd Johnson,	<i>Curtis Physio-Medical College,</i>
Dean Wentworth Myers,	†Charles Edward Wehrle,
Harry Melvin Piper,	Floyd Edward Westfall,
William Colfax Roberts, B.S.,	Erle Brice Woodward.
<i>University of Nebraska,</i>	

10

COLLEGE OF DENTAL SURGERY.

DOCTOR OF DENTAL SURGERY.

Hilen Duane Aldrich,	John Miller,
William John Allan,	Edgar Emil Nelson,
Arthur Albert Baker,	Fred Clifton Orvis,
Victor Emmet Bedford,	Harry Chantler Orvis,
Helmuth Philip Binzel,	Charles Mason Owen,
Francis Laurance Busch,	†Arthur Thomas Paull,
Will Chauncey Butler,	Sidney Dale Peters,
Joseph McGugan Cartwright,	William John Polglase,
Frank Popham Cattermole,	Francis Edwin Renkenberger.
Carroll Flood Chase,	Ray Donald Robinson,
Gilbert A. Cotton,	Erwin Albert Salisbury,
†Amos Charles Erdman,	Earl Winfield Sanford,
Loran Scott Fleming,	Edmund Harold Shannon,
George Matthew Freeman,	Harry William Sheldon,
John Edwin Gilbert,	†Samuel Cryor Sims, M.D., <i>Miami</i>
Henry William Harvey,	<i>Medical College,</i>
Claude Elton Hathaway,	†John William Smoots,
Perry Franklin Hines,	John Floyd Sortore,
Stanley A. Horning,	Flora Mae Spore,
Richard John Huyck,	Rena Melvin Squier,
Carl Augustus Leonard Johnson,	Clifford Finley Stipp,
Herbert Charles King,	Harrison Arthur Stites, A.M.,
Wilfred Douglas Kirk,	<i>Hillsdale College,</i>
Jay William Kline,	Philip Ralston Thomas,
William George Law,	Archibald C. Thompson,
†Carl Hans Lebert,	Loren Starritt Treat,
Jesse Levy,	Edward Norman Trenholme,
Charles Livingston McKinnis,	Fred Marcus Washburn,
David C. Martin,	Benjamin Warren Wells,
Sidney Martin,	Chauncey Clifton Wescott,
George Henry Mengel,	Frank DeWitt Wilson,
Clair Greene Meseroll,	Charles Augustus Wise,
Charles Jeremiah Miller,	Alvin Oleon Wright.

64

DOCTOR OF DENTAL SCIENCE.

James Roy Davis, D.D.S.,	Oliver Wilson White, D.D.S. 2—66
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HONORARY DEGREES.**MASTER OF SCIENCE.**

CHARLES FRANCIS BRUSH,
Graduate of the University in the Class of 1869; Inventor and Scientist.

WILLIAM WALLACE CAMPBELL,
Graduate of the University in the Class of 1886; Astronomer. 2

MASTER OF ARTS.

CAROLINE HAZARD,
President of Wellesley College.

DOCTOR OF LAWS.

CHARLES ARTEMAS KENT,
Professor of Law in the University from 1868 to 1886. 1-4

Total number of degrees conferred, - - - - 723

FACULTIES AND STUDENTS.*

Department of Literature, Science, and the Arts.

FACULTY.

JAMES B. ANGELL, LL.D., *President*.
ALBERT B. PRESCOTT, M.D., LL.D.
Rev. MARTIN L. D'OOGHE, LL.D.
WILLIAM H. PETTEE, A.M.
ISAAC N. DEMMON, LL.D.
ALBERT H. PATTENGILL, A.M.
WOOSTER W. BEMAN, A.M.
VICTOR C. VAUGHAN, Ph.D., Sc.D., M.D.
CHARLES S. DENISON, M.S., C.E.,
HENRY S. CARHART, LL.D.
RAYMOND C. DAVIS, A.M.
VOLNEY M. SPALDING, Ph.D.
HENRY C. ADAMS, LL.D.
BURKE A. HINSDALE, LL.D.
RICHARD HUDSON, A.M., *Dean*.
ALBERT A. STANLEY, A.M.
FRANCIS W. KELSEY, Ph.D.
OTIS C. JOHNSON, Ph.C., A.M.
PAUL C. FREER, Ph.D., M.D.
ANDREW C. McLAUGHLIN, A.M., LL.B.
ASAPH HALL, Jr., Ph.D.
ISRAEL C. RUSSELL, C.E., LL.D.
WARREN P. LOMBARD, A.B., M.D.
JACOB E. REIGHARD, Ph.B.

* A dagger (†) preceding a student's name indicates that he pursues studies, for the whole or a part of the year, in more than one department of the University.

THOMAS C. TRUEBLOOD, A.M.
 JAMES A. CRAIG, Ph.D.
 JOHN C. ROLFE, Ph.D.
 J. PLAYFAIR McMURRICH, Ph.D.
 ROBERT M. WENLEY, Sc.D., D.Phil.
 ELIZA M. MOSHER, M.D., *Women's Dean.*
 GEORGE HEMPL, Ph.D.
 FREDERICK G. NOVY, Sc.D., M.D.
 EDWARD D. CAMPBELL, B.S.
 FRED M. TAYLOR, Ph.D.
 FRED N. SCOTT, Ph.D.
 ALEXANDER ZIWET, C.E.
 GEORGE W. PATTERSON, Jr. Ph.D.
 FREDERICK C. NEWCOMBE, Ph.D.
 ALLEN S. WHITNEY, A.B.
 G. CARL HUBER, M.D.
 JOHN O. REED, Ph.D.
 ALFRED H. LLOYD, Ph.D.
 PAUL R. DE PONT, A.B., B.S., *Registrar.*
 JOSEPH H. DRAKE, A.B.
 DEAN C. WORCESTER, A.B.
 JOSEPH L. MARKLEY, Ph.D.
 MAX WINKLER, Ph.D.
 MORITZ LEVI, A.B.
 KEENE FITZPATRICK.
 JULIUS O. SCHLOTTERBECK, Ph.C., Ph.D.
 ERNST H. MENSEL, Ph.D.
 EARLE W. DOW, A.B.
 CHARLES H. COOLEY, Ph.D.
 MOSES GOMBERG, Sc.D.
 BENJAMIN P. BOURLAND, Ph.D.
 GEORGE O. HIGLEY, M.S.
 DAVID M. LICHTY, M.S.
 JOHN R. EFFINGER, Jr., Ph.D.
 KARL E. GUTHE, Ph.D.
 TOBIAS DIEKHOF, Ph.D.
 CLARENCE L. MEADER, A.B.
 ARTHUR G. HALL, B.S.
 GEORGE REBEC, Ph.D.
 WILLIAM H. WAIT, Ph.D.
 JAMES W. GLOVER, Ph.D.
 LOUIS A. STRAUSS, Ph.M.
 EDWIN C. GODDARD, Ph.B., LL.B.

VICTOR E. FRANCOIS.
PERRY F. TROWBRIDGE, Ph.B.
WARREN W. FLORER, Ph.D.
WALTER B. PILLSBURY, Ph.D.
EDWIN C. ROEDDER, Ph.D.
ALFRED H. WHITE, A.B.
JOHN S. P. TATLOCK, A.M.
*FANNY E. LANGDON, M.S.
ALICE G. SNYDER.
S. LAWRENCE BIGELOW, Ph.D.
JAMES B. POLLOCK, Sc.D.
EWALD BOUCKE, Ph.D.
AUGUSTUS TROWBRIDGE, Ph.D.
WILLIAM H. BUTTS, A.M.
JULIA W. SNOW, Ph.D.
HUGO P. THIEME, Ph.D.
CARL V. TOWER, Ph.D.
HERBERT S. JENNINGS, Ph.D.
THOMAS E. OLIVER, Ph.D.
HERBERT F. DE COU, A.M.
CHRISTIAN F. GAUSS, A.M.
HENRY A. SANDERS, Ph.D.
EUGENE C. SULLIVAN, Ph.D.
ARTHUR L. CROSS, Ph.D.
GEORGE A. HULETT, Ph.D.
SAMUEL J. HOLMES, Ph.D.
JONATHAN A. C. HILDNER, Ph.D.
JOHN DIETERLE, A.B.
KARL W. GENTHE, Ph.D.
ALICE L. HUNT.

Other Instructors and Assistants.

HENRY H. PARKE, B.L.
†SAMUEL A. JEFFERS, A.M.
FRANK S. BACHELDER.
NORMAN K. MCINNIS, A.M.
RAYMOND H. POND, M.S.
LEON J. COLE.
CORA J. BECKWITH,
ALPHONSO M. CLOVER, B.S.
GEORGE H. ALLEN, A.M.

*Deceased.

†Assistant in Latin.

JOHN W. SLAUGHTER, A.B., B.D.
✓ FRED L. WOODS.
NORMAN F. HARRIMAN.
RAYMOND PEARL, A.B.
MARY A. GODDARD.
ELMA CHANDLER.
ALICE S. HUSSEY, A.M.
WALTER D. HADZSITS, A.M.

STUDENTS.*

HOLDERS OF FELLOWSHIPS.

NAME.	RESIDENCE.
John William Tell Duvel, B.S., <i>Ohio State University</i> , 1897, <i>Holder of the Dexter M. Ferry Botanical Fellowship</i> , Botany; Vegetable Physiology; Organic Chemistry.	<i>Wapakoneta, O.</i>
Walter David Hadzsits, A.B., 1898, A.M., 1899, <i>Holder of the Elisha Jones Classical Fellowship</i> , Latin; Greek; Philosophy.	<i>Detroit.</i>
Harlow Stafford Person, Ph.B., 1899, <i>Holder of the Peter White Fellowship in American History</i> , American History; Political Economy; Sociology.	<i>Lansing.</i>

CANDIDATES FOR AN ADVANCED DEGREE AND OTHER RESIDENT GRADUATES.

NAME.	RESIDENCE.
George Henry Allen, A.B., 1898, A.M., 1899, Latin; Greek; History.	<i>Grand Rapids.</i>
Sadie Maria Alley, Ph.B., 1895, Latin; Roman Political Antiquities; Mathematics.	<i>Detroit.</i>
Joseph Ellet Antram, A.B., <i>Mount Union College</i> , 1897, Latin; Greek; Pedagogy.	<i>Alliance, O.</i>
Benjamin Franklin Bailey, B.S. (E.E.), 1898, Physics; General Chemistry; Mathematics.	<i>Detroit.</i>
Edna Lenore Ballard, A.B., 1898, Latin; Greek; Philosophy.	<i>Ann Arbor.</i>

*The principal subjects of study pursued by candidates for an advanced degree are indicated under their respective names; the subject first named being the major study.

Bertha Emily Barber, A.B., 1897,	<i>Norwalk, O.</i>
Elmer Sereno Bassett, B.S., 1897, Astronomy; Mathematics; Physics.	<i>Saline.</i>
John Watson Beach, A.B., 1896, Latin; Greek; English Philology.	<i>Lexington.</i>
Helen Louise Bishop, A.B., <i>Vassar College</i> , 1897, Latin; Greek; Pedagogy.	<i>Detroit.</i>
Clara Louisa Botsford, B.L., 1898,	<i>Plainwell.</i>
Kendall Page Brooks, A.B., <i>Alma College</i> , 1897, Mathematics; Physics; Pedagogy.	<i>Alma.</i>
Alice Gertrude Burdsal, B.L., 1899,	<i>Ravenswood, Ill.</i>
Edmund Claude Champion, B.S., 1899, Analytical Chemistry; Chemical Technology; Geology.	<i>Three Rivers.</i>
Allen Lysander Colton, Ph.B., 1889, A.B., 1890, A.M., 1898,	<i>Ann Arbor.</i>
Ruie Ann Connor, Ph.B., 1899, Latin; Philosophy; Hygiene.	<i>Ann Arbor.</i>
Alfred LaRue Davenport, B.S., <i>Pomona College</i> , 1897, Physics; Chemistry; Mathematics.	<i>Pomona, Cal.</i>
Rachel Ella Dawson, Ph.B., 1888, English Literature; Philosophy; English Philology.	<i>Pontiac.</i>
Wallace Stedman Elden, A.B., <i>Bowdoin College</i> , 1889, A.M., <i>ibid.</i> , 1892, Latin; French Philology; French Literature.	<i>Waterville, Me.</i>
Oren Samuel Flanagan, A.B., <i>Kalamazoo College</i> , 1892,	<i>Ann Arbor.</i>
Clarence James Foreman, B.S., <i>Michigan Agri- cultural College</i> , 1894, M.S., <i>ibid.</i> , 1896, History; Political Economy; Pedagogy.	<i>Harbor Springs.</i>
James Leslie French, A.B., 1899, Hebrew; Philosophy of Religion; Modern Ethics.	<i>Grand Rapids.</i>
Maude Ethel Fuller, A.B., 1895, Latin; Greek; English Literature.	<i>Charlotte.</i>
Anna Bordwell Gelston, Ph.B., 1881, English Literature; Italian Literature; Rhetoric.	<i>Ann Arbor.</i>
Frances Katherine Gould, B.L., 1892, English Literature; History; Rhetoric.	<i>Flint.</i>
Augustus Ernest Guenther, B.S., 1898, Physiology; Physiological Chemistry; Histology.	<i>Sandusky, O.</i>
George Depue Hadzsits, A.B., 1895, A.M., 1896, Greek; Latin; Philosophy.	<i>Detroit.</i>

- Arthur Graham Hall, B.S., 1887, *Ann Arbor.*
Mathematics; Physics; Mechanics.
- Enoch Horton Harriman, B.L., 1892, *Fenwick.*
Physics; Mathematics; Chemistry.
- William Henry Hawkes, A.B., 1887, *Ann Arbor.*
Physics; Mathematics; Chemistry.
- Henry Heitmann, Ph.B., 1899, *New Bremen, O.*
History of Philosophy; Philosophy of Hegel; German.
- Alice Jovita Hickey, B.L., 1899, *Michigamme.*
German; French; English.
- George Oswin Higley, B.S., 1891, M.S., 1893, *Ann Arbor.*
Inorganic Chemistry; Physics; Mineralogy.
- Alice Sarah Hussey, A.B., *Vassar College*, 1894, *Rochester, N. Y.*
A.M., 1899,
Rhetoric; Aesthetics; English Literature.
- Samuel Allen Jeffers, A.B., *Central Wesleyan College*, 1892, A.M., 1897, *New Florence, Mo.*
Latin; Greek; Ancient Ethics.
- Alice Clarissa Joy, Ph.B., *Albion College*, 1898, *Springport.*
American History; European History; Political Economy.
- Mary Laura Judd, *Mount Holyoke College*, Ph.B., *Holyoke, Mass.*
University of Syracuse, 1890,
Latin Literature; English Literature; Latin Philology.
- Florence Bingham Kinne, A.B., 1887, *Ypsilanti.*
American Literature; Latin; Roman Political Antiquities.
- Grace Lord Lamb, B.L., 1897, M.L., 1898, *Erie, Pa.*
- Carl Frederick Augustus Lange, A.B., 1894, *Saginaw.*
A.M., *Harvard Univ.*, 1899,
Germanic Philology; German Literature; English Philology.
- Ruth Alberta Ludlow, A.B., *Albion College*, 1898, *Albion.*
English Literature; American Literature; Rhetoric.
- Norman King McInnis, A.B., 1898, A.M., 1899, *Saginaw.*
English Literature; Rhetoric; Aesthetics.
- Jessie Fremont Ruby McNeal, B.S., 1895, *Alvordton, O.*
M.D., 1897,
- Edward Clark Marsh, A.B., *Alma College*, 1896, *Grand Rapids.*
English Literature; Old English; Philosophy.
- Ralph Clark Mason, B.L., 1897, *Ann Arbor.*
- Yoshinaga Mikami, *Keio College*, 1897, *Kofu, Japan.*
Political Economy; History; International Law.
- Aura Maud Miller, B.L., 1890, A.M., 1897, *Ann Arbor.*
English Literature; English Philology; Pedagogy.
- Louallen Frederick Miller, B.S., 1899, *Aurora, Ill.*
Physics; Analytical Chemistry; Mathematics.

Charles Rufus Morey, A.B., 1899, Archæology; Greek; Latin.	<i>Charlotte.</i>
Seymour Tenny Morse, C.E., 1878,	<i>Ann Arbor.</i>
Marquis Joseph Newell, A.B., <i>Kalamazoo College</i> , 1896, A.B., <i>University of Chicago</i> , 1899, Mathematics; Pedagogy; Physics.	<i>Portage.</i>
John Noordewier, A.B., 1899, Hebrew; Assyrian; Latin.	<i>Jenison.</i>
Joanna Blessing Oliver, A.B., <i>Wellesley College</i> , 1899, Latin; History; Pedagogy.	<i>Onawa, Ia.</i>
Henry Hall Parke, B.L., 1898, Experimental Zoology; Vertebrate Zoology; Botany.	<i>Sycamore, Ill.</i>
Carlotta Emma Pope, Ph.B., 1895, American History; Latin; English Literature.	<i>Allegan.</i>
Harrison McAllester Randall, Ph.B., 1893, Ph.M., 1894, Physics; Mathematics; Physical Chemistry.	<i>Ann Arbor.</i>
George Fletcher Richmond, B.S., <i>Michigan</i> <i>Agricultural College</i> , 1898, General Chemistry; Analytical Chemistry; Physics.	<i>Belding.</i>
Gilbert Jeremiah Roberts, A.B., <i>Penn College</i> , 1892, A.M., <i>ibid.</i> , 1899, Latin; Greek; Philosophy.	<i>Oskaloosa, Ia.</i>
Herman Russell, B.S., 1898, Analytical Chemistry; Organic Chemistry; Chemical Technology.	<i>Manistee.</i>
Helen Frances Sage, B.L., <i>University of Cin-</i> <i>cinnati</i> , 1899, American History; English Literature; Pedagogy.	<i>Cincinnati, O.</i>
Daniel Cornelius Schaffner, A.B., <i>College of Em-</i> <i>poria</i> , 1898, Geology; Mineralogy; Zoology.	<i>Morganville, Kan.</i>
Bertha Barbara Scieur, B.L., 1893,	<i>Saginaw, West Side.</i>
William Hittell Sherzer, B.S., 1889, M.S., 1890, Geology; Zoology; Palæontology.	<i>Ypsilanti.</i>
Martin Simpson, B.S., <i>Olivet College</i> , 1899, Pedagogy; History of Education; Philosophy.	<i>Deckerville.</i>
John Willis Slaughter, A.B., <i>Lombard Univer-</i> <i>sity</i> , 1898, B.D., <i>ibid.</i> , 1898, Metaphysics; Psychology; Sociology.	<i>Camp Hill, Ala.</i>
Ruth Louise Smith, B.S., 1899,	<i>Marshall.</i>
Shirley Wheeler Smith, B.L., 1897, American Literature; American History; Rhetoric.	<i>Ann Arbor.</i>

Carrie May Sperry, A.B., 1893, Latin; English Literature; Hygiene.	<i>Ann Arbor.</i>
Louis A. Strauss, B.L., 1893, Ph.M., 1894, English Literature; Rhetoric; History.	<i>Ann Arbor.</i>
James Wellings Sturgis, A.B., 1896, A.M., 1897, Latin; Greek; Philosophy.	<i>Chicago, Ill.</i>
LaMonte Taylor, A.B., <i>University of Kansas</i> , 1899, Latin; Greek; Pedagogy.	<i>Kansas City, Mo.</i>
Mary Grace Taylor, A.B., 1884, English Literature; English Philology; German Literature.	<i>Ann Arbor.</i>
Ralph Wendell Taylor, A.B., <i>Albion College</i> , 1896, Philosophy; Pedagogy; Rhetoric.	<i>Hancock.</i>
Mary Maclean Thompson, B.L., 1897, English Literature; Rhetoric; American History.	<i>Pontiac.</i>
Itsuo Tokunaga, <i>Doshisha College</i> , 1894, 1896, Political Economy; Finance; History.	<i>Yanagawa, Japan.</i>
Lila Turner, A.B., 1899, American History; European History; English Literature.	<i>Battle Creek.</i>
George Wagner, Ph.C., 1893, A.B., <i>University of Kansas</i> , 1899,	<i>Lawrence, Kan.</i>
May Walmsley, Ph.B., 1899, European History; American History; Sociology.	<i>LaGrange, Ill.</i>
Frank Enos Welch, A.B., 1887, A.M., <i>Tulane University</i> , 1897, Germanic Philology; German Literature; French Philology.	<i>Ann Arbor.</i>
Frederick Henry Weng, Ph.B., 1898, German; Latin; English Philology.	<i>Marine City.</i>
Etta Rhoda Wilbur, B.S., 1895, American History; German; English Literature.	<i>Lansing.</i>
Mary Bessie Wiley, A.B., <i>Antioch College</i> , 1897, Latin; English Literature; Roman Political Antiquities.	<i>Yellow Springs, O.</i>
Vernon Justin Willey, B.S., <i>Michigan Agricul- tural College</i> , 1893, General Chemistry; Physics; Mathematics.	<i>Lansing.</i>
Eugene Cyrus Woodruff, B.S., 1894, M.S., 1896, Physics; Mathematics; Organic Chemistry.	<i>Ludington.</i>

The following student, enrolled in the Department of Law, is also a candidate for an advanced degree in the Department of Literature, Science, and the Arts. See page 126.

NAME.	RESIDENCE.
Thomas Hall Shastid, M.D., <i>University of Ver- mont</i> , 1888, A.B., <i>Harvard Univ.</i> , 1893, English Literature; English Philology; Pedagogy.	<i>Battle Creek.</i>

CANDIDATES FOR A MASTER'S DEGREE, STUDYING IN ABSENTIA.

NAME.	RESIDENCE.
Mary Sophia Case, A.B., 1884, British Philosophy; Political Philosophy; English Literature.	Wellesley, Mass.
Paul A. Cowgill, B.S., 1897, Pedagogy; Vegetable Physiology; Zoology.	Lapeer.
Adoniram Judson Ladd, A.B., 1894, English Literature; Pedagogy; Rhetoric.	Holland.

UNDERGRADUATES.*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Blanche Emma Abbott,	Ph.B.	24	Ann Arbor.
Horatio Johnson Abbott,	B.L.		Ann Arbor.
Emma Catherine Ackermann,	Ph.B.	106	West Bay City.
Carl Nelson Adams,	B.S.	2	Detroit.
Charles Remington Adams,	A.B.		Austin, Ill.
Ethel Alfretta Adams,	A.B.		Chicago, Ill.
Franklin Pierce Adams,	Ph.B.	3	Chicago, Ill.
Gertrude Adams,	Ph.B.		Sault Ste. Marie.
Mary Belle Adams,	A.B.	75	Ann Arbor.
Bertha Jane Addison,			Leonidas.
Helen Josephine Ahnefeldt,	A.B.		Grand Rapids.
Kakujiro Akamatsu,	B.L.		Tokyo, Japan.
Lucius Ephraim Allen,	B.S.	27	Jamestown, N. Y.
Tillie Vary Allen,	Ph.B.		Battle Creek.
Flora Larned Anderson,	Ph.B.	63	Midland.
Frank Eugene Andrews,	B.S.	104	Coldwater.
Mabel Pugsley Andrews,	Ph.B.		Paw Paw.
Robert Edmund Andrews,	A.B.	14	Bay City.
Maude Elizabeth Aniba,			Ann Arbor.
Bertha Elise Aprill,	Ph.B.	4	Ann Arbor.
Ralph Clark Apted,	B.S.	74	Grand Rapids.
Effa A. Armstrong,	Ph.B.	56	Chelsea.
Henry Herbert Armstrong,	A.B.	61	Ann Arbor.
Ada Aileen Arnold,			Union.

* The abbreviations in the column headed DEGREE indicate the line of study the student is intending to complete, in accordance with the requirements for graduation as given on pages 111 to 114. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed CREDIT indicate the number of hours of work taken by candidate for degrees prior to the beginning of the current academic year, 1899-1900, and completed without conditions, or credited to them on advanced standing. By an hour of work meant the equivalent of one exercise a week for one semester.

Oliver Kossuth Atwood,	A.B.	78	<i>Saginaw.</i>
Elizabeth Esther Austin,			<i>Detroit.</i>
Waldo Allard Avery, Jr.,	B.S.		<i>Detroit.</i>
†Frank Merrill Ayer,	A.B.	50	<i>Grand Rapids.</i>
Ellen Botsford Bach,	A.B.	56	<i>Ann Arbor.</i>
Frank Staples Bachelder,	B.S.	103	<i>Saint Charles, Minn.</i>
Jennie Grace Badenhausen,	Ph.B.	61	<i>Decatur, Ill.</i>
Harvey Lloyd Baer,			<i>Akron, O.</i>
Lavina Cora Baert,	Ph.B.		<i>Zeeland.</i>
Albert Ross Bailey,	B.L.		<i>Kalamazoo.</i>
Franc May Bailey,	A.B.		<i>Port Huron.</i>
Mary Janet Bain,	A.B.	17	<i>Ann Arbor.</i>
Walter Gelvin Bain,			<i>Ann Arbor.</i>
Joseph Hershey Bair, Ph.B.,			
<i>Grove City College,</i>	Ph.B.		<i>Hall, Pa.</i>
Irene Stoddard Baker,	A.B.	31	<i>Chicago, Ill.</i>
Maude H. Balding,	B.S.		<i>South Bend, Ind.</i>
Ella May Baldwin,	Ph.B.	31	<i>Flint.</i>
George Edward Baldwin,	B.L.	83	<i>Saint Johns.</i>
Samuel Ball,	B.S.	2	<i>Grand Rapids.</i>
Katharine Forrest Ballentine,	A.B.	39	<i>Port Huron.</i>
Meta Alice Bancroft,	B.L.	88	<i>Ann Arbor.</i>
John Ghio Barada,	Ph.B.	47	<i>Saint Louis, Mo.</i>
Bessie Laura Barber,	A.B.	29	<i>Charlotte.</i>
Carrie Anna Barber,	B.L.	56	<i>Richland.</i>
Edward Emerson Barbier,			<i>Ann Arbor.</i>
Clara Elizabeth Barclay,	A.B.	94	<i>Peoria, Ill.</i>
Louisa Elizabeth Barker,	A.B.	106	<i>Davenport, Ia.</i>
May Belle Barker,	Ph.B.	24	<i>Batavia, N. Y.</i>
Edith Alice Barnard,	A.B.	5	<i>Saginaw, West Side.</i>
Lambert Edgar Barnes,	A.B.		<i>Ypsilanti.</i>
Harry Hyde Barnum,	Ph.B.	2	<i>Riverside, Ill.</i>
Edna Hope Barr,	Ph.B.	96	<i>Battle Creek.</i>
Ralph Kingsley Barr,	Ph.B.		<i>Kendallville, Ind.</i>
Roland Bruce Barrett,	A.B.	49	<i>Chicago, Ill.</i>
Grace Jeannette Bartelme,	A.B.		<i>Austin, Ill.</i>
Julius Earle Barton,	A.B.	44	<i>Detroit.</i>
Melvin Eugene Bassett,	Ph.B.		<i>Detroit.</i>
Edson Sunderland Bastin,	B.S.	40	<i>Merchantville, N. J.</i>
Anna May Lamb Bates,	A.B.	61	<i>Charlotte.</i>
Ernest Sutherland Bates,	A.B.	32	<i>Cleveland, O.</i>
Julia Florentyne Bateski,	Ph.B.	66	<i>South Lake Linden.</i>
Frank James Bayley,	B.L.	23	<i>Detroit.</i>

Minnie Martha Beal,	B.L.	74	Northville.
Cora Beardslee,	A.B.	12	Pontiac.
David Elijah Beardsley,	B.S.	30	Kalamazoo.
George King Beatty,	B.S.		Ottawa, Ill.
Zillah Beatty,	Ph.B.		Birmingham.
Jay Mitchell Beck,	B.S.	56	Delta, O.
Viola May Becker,	Ph.B.		Saginaw.
John Henry Beckert,	A.B.	52	Saint Louis, Mo.
Angie Maria Beckwith,	A.B.	4	Grand Rapids.
Cora Jipson Beckwith,	B.L.	102	Grand Rapids.
Adah Gertrude Beebe,	B.L.		Tipton.
Elmer Nelson Beebe,	Ph.B.	90	Ann Arbor.
Grace May Beebe,			Ann Arbor.
Norman Peter Beebe,	B.S.	35	Mendon.
Julia Henrietta Beese,	B.S.	105	Saginaw.
Grace Griffith Begle,	Ph.B.	104	Ann Arbor.
Howell Llewellyn Begle,	B.S.	88	Ann Arbor.
Ned Charles Begle,	B.S.	64	Ann Arbor.
Beatrice Ollie Belford,	A.B.	44	Ann Arbor.
John Amos Belford,			Toledo, O.
Charlotte Anna Belger,			Pontiac.
Constance Bement,	Ph.B.		Lansing.
John Alonzo Bennett,	B.S.	32	Jackson.
Julia Peet Benson,	Ph.B.	83	Gambier, O.
Robert Louis Benson,	B.S.	37	Mount Morris.
Finis Bentley,	A.B.		Marshall.
George Nelson Bentley,	B.L.	88	Elm.
Nancy Malana Bentley,	Ph.B.	90	Marshall.
Walter Gottfried Benz,	Ph.B.		Saint Paul, Minn.
John Knight Munro Berry,	Ph.B.	60	Cedar Rapids, Ia.
Minnie Ethel Pratt Berry,	A.B.	8	Rockford.
Charles Lorton Best,	B.L.	57	Freeport, Ill.
Ebenezer George Beuret,			Flint.
Milton Valentine Bickel,	B.S.	52	McGregor, Ia.
Ralph Jason Bidwell,	Ph.B.	9	Tecumseh.
Frank Luther Bihlmaier,			Port Byron, Ill.
Lucy Edna Bird,			Ann Arbor.
Howard Berkey Bishop,	B.S.	93	Ann Arbor.
Charlotte Sécór Bissell,	Ph.B.	11	Toledo, O.
Judson Wright Blackmon,	B.S.		Crary Mills, N. Y.
Ruth Ellen Blackman,	Ph.B.	33	Rochelle, Ill.
Harry Vernon Blakley,	B.S.		Ann Arbor.
Jeannette Blanchard,			Minonk, Ill.

Annie Bock,	Ph.B.	98	<i>Akron, O.</i>
Faye Bodmer,	Ph.B.	24	<i>Ann Arbor.</i>
Katherine Bogle,	A.B.	6	<i>Ann Arbor.</i>
Winifred Bogle,	A.B.	102	<i>Ann Arbor.</i>
Louise Estelle Bolley,	B.L.		<i>Eagle River.</i>
Otto Herman Bollman,	B.S.	110	<i>Wilson, Minn.</i>
Bessie Brown Bond,	B.S.		<i>Ann Arbor.</i>
Lesta Edith Bookwalter,			<i>Greenville, O.</i>
Herbert Stanley Boone,	Ph.B.		<i>Cincinnati, O.</i>
Bernice Bort,	Ph.B.		<i>Saint Joseph.</i>
Elizabeth Bouslom,	Ph.B.	90	<i>Negaunee.</i>
Mai Bryan Bourne,	B.L.	31	<i>East Tawas.</i>
Horace Samuel Boutell,	Ph.B.	60	<i>Ypsilanti.</i>
Lena Edna Bow,	Ph.B.	24	<i>Saginaw.</i>
Florence Bowen,	A.B.	65	<i>Ann Arbor.</i>
Mabyn Bowen,	Ph.B.	62	<i>Detroit.</i>
Nathan Hayden Bowen,	Ph.B.		<i>Ypsilanti.</i>
Albert James Bower,	B.S.		<i>Greenville.</i>
Harold Martin Bowman, LL.B.,	B.L.	95	<i>Des Moines, Ia.</i>
Elba Harvey Boyd,			<i>Clio.</i>
Warren Cushman Boyd,	A.B.		<i>Chelsea.</i>
Mertie Marie Boyer,	B.S.	15	<i>Goshen, Ind.</i>
Blanche Christine Boyle,	Ph.B.	32	<i>Detroit.</i>
Isabel Louise Bradley,	B.S.	33	<i>Bay City.</i>
John William Bradshaw,	A.B.	108	<i>Ann Arbor.</i>
Louise Brayton,	Ph.B.	60	<i>Grand Rapids</i>
Harold Prell Breitenbach,	A.B.	58	<i>Detroit.</i>
Charles Bricker,	A.B.	28	<i>Saginaw.</i>
Anna Adelia Bright,	B.L.	59	<i>Ishpeming.</i>
Don Owen Brillhart,	Ph.B.	64	<i>Kendallville, Ind.</i>
Grace Marie Brinkerhoff,	Ph.B.	52	<i>Upper Sandusky, O.</i>
Anna Eloise Bristol,	Ph.B.	89	<i>Franklin.</i>
Harry Howard Bristol,			<i>Franklin.</i>
Bruce Gray Broad,	A.B.	12	<i>Pontiac.</i>
Frederick Joseph Brogen,	A.B.	94	<i>Battle Creek.</i>
Worthington Kirtland Bromley,	A.B.		<i>Cleveland, O.</i>
Arthur Dutton Brookfield,	B.S.	62	<i>Englewood, Ill.</i>
Harriet Eugenie Brooks,	Ph.B.	30	<i>Grand Rapids.</i>
Lucy Margaret Brooksbank,	A.B.	28	<i>Chicago, Ill.</i>
Amy Louisa Broome,	Ph.B.	39	<i>Ann Arbor.</i>
Allen Meason Broomhall,	Ph.B.	25	<i>Ann Arbor.</i>
Elizabeth Stryker Brown,	A.B.	26	<i>Ann Arbor.</i>
Frances Josephine Brown,	Ph.B.	56	<i>Port Huron.</i>

Glen Harger Brown,	B.S.		<i>Howell.</i>
Helena Aloysia Brown,	B.L.	86	<i>Port Huron.</i>
Henry Jefferson Brown, Jr.,	A.B.	40	<i>Ann Arbor.</i>
Josephine Mercy Brown,	A.B.		<i>Jackson.</i>
Monte Frank Brown,	B.L.		<i>Menominee.</i>
Nellie Adalesa Brown,	B.S.	60	<i>West Bay City.</i>
Victor Ernest Brown,	B.S.	86	<i>Detroit.</i>
Arthur Graham Browne,	A.B.	24	<i>Bay City.</i>
Iva Bruce,	Ph.B.	83	<i>Birmingham.</i>
Evelyn Hope Bryant,	A.B.	88	<i>Detroit.</i>
Dora Gilberg Buchhalter,	Ph.B.	34	<i>Detroit.</i>
Mary Gertrude Buck,	A.B.	29	<i>Paw Paw.</i>
Martha Errington Buckingham,	Ph.B.	31	<i>Muskegon.</i>
Mia Elizabeth Buckingham,	A.B.	38	<i>Muskegon.</i>
Louis Paul Buckley,	B.S.		<i>Petoskey.</i>
Thomas Bingham Buell, Jr.,	A.B.	61	<i>Union City.</i>
Roberta Bull,	A.B.		<i>Byron, Ill.</i>
Austin Frederick Burdick,	B.S.	65	<i>Lansing.</i>
Edith Imogene Burgess,	Ph.B.	31	<i>Omaha, Neb.</i>
Nellie Grace Burgess,			<i>Kangley, Ill.</i>
Ruth Hayward Burington,	Ph.B.	92	<i>Conneaut, O.</i>
Nellie McDonald Burk,	B.L.	56	<i>Coldwater.</i>
Ellen Perry*Burnham,	Ph.B.	78	<i>Malone, N. Y.</i>
George G. Burns,	B.S.	31	<i>Fremont.</i>
Philip Everette Bursley,	B.L.	24	<i>Fort Wayne, Ind.</i>
Frank Lee Buser,	B.S.		<i>Cedar Rapids, Ia.</i>
Charles Sumner Bush,	A.B.	28	<i>Battle Creek.</i>
Vernon Eli Bush,	Ph.B.	90	<i>Battle Creek.</i>
Clifton Harvey Bushnell,	B.S.	60	<i>Kansas City, Mo.</i>
Amy Iola Butterfield,			<i>Ann Arbor.</i>
Roger Champlin Butterfield,	A.B.	63	<i>Grand Rapids.</i>
Mollie Drew Butts,	A.B.		<i>Lansing.</i>
Lawrence Magnus Butzel,	Ph.B.	66	<i>Detroit.</i>
Eva Maye Byerly,	B.S.	57	<i>Anamosa, Ia.</i>
Agnes Ophelia Cady,	B.L.	89	<i>Ann Arbor.</i>
Florence Pearl Cady,	B.S.	6	<i>Ann Arbor.</i>
Gorden Jared Cain,	A.B.		<i>Menominee.</i>
William Callan,	B.L.	78	<i>Detroit.</i>
Edward Lincoln Campbell,	Ph.B.	90	<i>Hillsdale.</i>
Harold Swift Campbell,	Ph.B.		<i>Napoleon, O.</i>
Herbert John Campbell,	Ph.B.	66	<i>Riverside, Ill.</i>
Ira Alexander Campbell,	B.L.	92	<i>Charlevoix.</i>
James Andrew Campbell,	A.B.	75	<i>Ypsilanti.</i>

Oscar James Campbell, Jr.,	A.B.	31	<i>Cleveland, O.</i>
Zilpha Jane Campbell,	Ph.B.	63	<i>Birmingham.</i>
Arthur Whittlesey Cannell,			<i>Lansing.</i>
Anna Emeline Carpenter,	Ph.B.	97	<i>Saginaw.</i>
Jesse Bryant Carpenter,	A.B.	35	<i>Baileyville, Ill.</i>
Rees Herbert Carr,			<i>Detroit.</i>
Herbert Porter Carrow,	B.S.	28	<i>Ann Arbor.</i>
Mary Trowbridge Carson,	B.L.	96	<i>Ann Arbor.</i>
Edith Christena Carter,	A.B.	12	<i>Decatur, Ill.</i>
Clara Lovina Case,	B.L.	87	<i>Ypsilanti.</i>
Elisha Warner Case,	Ph.B.	92	<i>Chicago, Ill.</i>
Minnie Cecilia Cassidy,	B.S.	87	<i>Chelsea.</i>
Rose Mary Cassidy,	B.L.	94	<i>South Bend, Ind.</i>
Edward Burns Caulkins,	B.L.	87	<i>Detroit.</i>
Virginia Chalmers,			<i>Pittsfield.</i>
Marvin Howard Chamberlain, Jr.,	A.B.	2	<i>Detroit.</i>
Vera Chamberlin,	Ph.B.	94	<i>Montpelier, O.</i>
Clement Forsythe Chandler,	A.B.	45	<i>Ann Arbor.</i>
Elma Chandler,	B.S.	86	<i>Greenville.</i>
Edmund Hall Chaney,	A.B.	96	<i>Detroit.</i>
Roy Dikeman Chapin,	B.L.	14	<i>Lansing.</i>
Clara Abigail Chase,	B.L.	48	<i>Bay City.</i>
Ethel Bennett Chase,			<i>La Porte, Ind.</i>
Andrew B. Christenson,			<i>Gunnison, Utah.</i>
Adeline Derrick Christopher,	A.B.	8	<i>Saginaw.</i>
Katharine Christopher,	B.L.	64	<i>Saginaw.</i>
Carolyn McMechau Chubb,	A.B.	8	<i>Coldwater.</i>
Edith Lynne Chubb,	B.L.		<i>Ann Arbor.</i>
Sara Gertrude Chubb,	A.B.	47	<i>Coldwater.</i>
Clarence Nathan Church,	A.B.	42	<i>Ithaca.</i>
Francis LeGrand Church,	A.B.	86	<i>Byron.</i>
Gertrude May Chute,	Ph.B.	67	<i>Ann Arbor.</i>
Gertrude Lydia Clark,	A.B.	61	<i>Howell.</i>
Sereno Burton Clark,	A.B.	96	<i>Union City.</i>
Edith Irene Clarke,	A.B.	32	<i>Detroit.</i>
Frances Elizabeth Clarke,	B.L.	87	<i>Albion, N. Y.</i>
Ina Van Liew Clawson,	Ph.B.	67	<i>Detroit.</i>
William Henry Harrison Clayton,	B.S.	34	<i>South McAlaster, Ind.</i>
Earl Amos Clemans,			<i>Oshkosh, Wis.</i>
Ernest Cleverdon,	B.S.	99	<i>Austin, Ill.</i>
Minnie Pamela Clough,			<i>Detroit.</i>
Lura Cochrane,			<i>Almont.</i>

[Ter.]

Morse Moses Cohen,	B.S.	87	<i>Detroit.</i>
Frederick Standish Colburn,	A.B.	63	<i>Detroit.</i>
Walter Francis Colby,	A.B.	63	<i>Hart.</i>
May Belle Coldren,	Ph.B.	27	<i>Salem.</i>
Harrie Newton Cole,	A.B.	79	<i>Ann Arbor.</i>
Leon Jacob Cole,	B.S.	64	<i>Ann Arbor.</i>
Mary Scott Cole,			<i>Ann Arbor.</i>
Harry Mason Comins,	A.B.		<i>Buena Vista.</i>
Ralph Emerson Compton,	B.L.		<i>Ann Arbor.</i>
Lulu Coney,	Ph.B.	15	<i>Ionia.</i>
Amy Florence Conger,	A.B.	80	<i>Grand Rapids.</i>
May Frances Conlon,	B.L.	37	<i>Grand Rapids.</i> ¹
Vera Nancy Connor,	B.L.	30	<i>Ann Arbor.</i>
Alice Helena Cook,	A.B.	102	<i>Forestville, N. Y.</i>
Robert Hinckley Cook,	A.B.	32	<i>Saginaw.</i>
Elizabeth Cooley,	B.S.	28	<i>Lansing.</i>
Lucy Alliance Cooley,	Ph.B.		<i>Ann Arbor</i>
Mary Beatrice Cooley,	B.L.	92	<i>Ann Arbor.</i>
Thurlow Emmett Coon,	A.B.		<i>Ann Arbor.</i>
Frank Lawrence Cooper,	B.S.	92	<i>Owosso.</i>
Otis Merriam Cope,	A.B.	34	<i>Ionia.</i>
Frank William Copley,	A.B.	35	<i>Kansas City, Mo.</i>
Georgia Chesbrough Coppock,	A.B.	1	<i>Peoria, Ill.</i>
Clarence Clifford Corl,	Ph.B.	4	<i>Toledo, O.</i>
Joseph Henry Corns,	Ph.B.	64	<i>Detroit.</i>
Claude Carl Cornwell,	B.L.		<i>Jefferson, O.</i>
Harriet Marian Cornwell,			<i>Ann Arbor.</i>
Anna Belle Corson,	Ph.B.		<i>Birmingham.</i>
Edward Samuel Corwin,	Ph.B.	92	<i>Plymouth.</i>
John Francis Cotter,	B.L.	23	<i>Detroit.</i>
Margaret Helen Cousin,	A.B.	63	<i>Detroit.</i>
Harry Kent Crafts,	A.B.	63	<i>Austin, Ill.</i>
Nellie Evelyn Crane,	Ph.B.		<i>Bedford.</i>
Herbert Eugene Crawford,	A.B.	56	<i>Vinton, Ia.</i>
Michael Hugh Crissman,	Ph.B.	50	<i>Romeo.</i>
John Hunt Crosby,	B.S.	32	<i>New Buffalo.</i>
Laura Esther Crozer,	Ph.B.		<i>Menominee.</i>
Fredrick Charles Crumpacker,	B.L.		<i>Valparaiso, Ind.</i>
Harry Lewis Crumpacker,	B.S.		<i>La Porte, Ind.</i>
Owen Lucas Crumpacker,	B.L.		<i>Valparaiso, Ind.</i>
Charles Edward Cullen,	A.B.	32	<i>Chicago, Ill.</i>
Robert Francis Culver,	Ph.B.	24	<i>Mosherville.</i>
Florence Mabelle Cumings,	Ph.B.	62	<i>Paw Paw.</i>

Edna Florence Cumming,	A.B.	29	<i>Port Huron.</i>
Frances Jennie Cummings,	Ph.B.		<i>Pontiac.</i>
Agnes Fleming Currie,	Ph.B.	27	<i>Lake Linden.</i>
Harvey Lincoln Curtis,	Ph.B.	96	<i>Dansville.</i>
Clara Adell Curtiss,	A.B.	89	<i>Ann Arbor.</i>
James Oliver Curwood,			<i>Owosso.</i>
Robert Myron Cutting,	A.B.	4	<i>Austin, Ill.</i>
Winifred Campbell Daboll,	A.B.	90	<i>Saint Johns.</i>
Anna Agnes Daley,	A.B.	87	<i>Menominee.</i>
Maude Loretta Daley,	A.B.	81	<i>Menominee.</i>
George Green Damon,	B.S.	52	<i>Saint Louis, Mo.</i>
Mary Daniells,	B.S.		<i>Grand Rapids.</i>
Daniel Edward Dannenberg,			<i>Tahlequah, Ind. Ter.</i>
Allen Lynn Darr,	B.L.	31	<i>Tacoma, Wash.</i>
George Howard Davey,	B.L.		<i>Bessemer.</i>
Edward Evan Davies,	B.S.	59	<i>Dixon, Ill.</i>
Morgan Lloyd Davies,	B.L.	89	<i>Dixon, Ill.</i>
Arthur Llewellyn Davis,	Ph.B.	60	<i>Aurora, Ill.</i>
Clara Marie Davis,	A.B.		<i>Lansing.</i>
Emerson Davis,	B.S.	63	<i>Detroit.</i>
Grant Train Davis,	B.L.		<i>Clinton.</i>
June Louise Davis,			<i>Lansing.</i>
Lucy Corbett Davis,	Ph.B.	122	<i>Lansing.</i>
Samuel Hurd Davis,	B.L.		<i>Lansing.</i>
Robert Dawson,	B.L.	32	<i>Hastings.</i>
Robert Hamilton Dawson,			<i>Wyandotte.</i>
Mason Laws Dean,	A.B.		<i>Kansas City, Mo.</i>
Grace L. Debenham,			<i>Milan.</i>
Robert Peter DeBruyn, A.B.,			
<i>Hope College,</i>	A.B.	90	<i>Holland.</i>
Genevieve Decker,	A.B.	45	<i>Battle Creek.</i>
Agnes Densmore,	Ph.B.		<i>Reed City.</i>
Nellie Grace Densmore,	A.B.	54	<i>Owosso.</i>
Minna Caroline Denton,			<i>Fort Smith, Ark.</i>
Henri Pierre de Pont,	B.S.	54	<i>Ann Arbor.</i>
Genevieve Ledyard Derby,	B.S.	99	<i>Saginaw.</i>
Fred Gray Dewey,	A.B.	44	<i>Pontiac.</i>
Mary Hannah Dewey,	Ph.B.	30	<i>Owosso.</i>
Maud Mary DeWitt,	B.S.	95	<i>Sandusky, O.</i>
Marshall Eugene DeWolfe,	B.L.	4	<i>Marion, O.</i>
Lula J. Dickinson,	B.S.	62	<i>Gregory.</i>
Frank Diehl,	Ph.B.	98	<i>Holt.</i>
Robert Gardiner Dillaway,	A.B.	8	<i>Romeo.</i>

Florence May Diver,	A.B.	90	<i>South Norwalk, Conn.</i>
Harry Clifford Doane,	B.S.	109	<i>Ann Arbor.</i>
Louise Frances Dodge,	Ph.B.	91	<i>Adrian.</i>
John Arnold Doelle,	A.B.	30	<i>Yale.</i>
Agnes Sybil Dole,	B.S.	59	<i>Pittsburgh, Pa.</i>
Louis Kirke Douglass,	A.B.	63	<i>Detroit.</i>
Elsie Grace Downer,	B.S.	95	<i>Hancock.</i>
Adelaide Elizabeth Dressel,			<i>Kane, Ill.</i>
Anna Elizabeth Drummond,	Ph.B.	4	<i>Chicago, Ill.</i>
John Francis Ducey,			<i>Detroit.</i>
Adolphus Mansfield Dudley,	A.B.	61	<i>Morrow, O.</i>
Irene Anne Duffy,	E.L.	44	<i>Ann Arbor.</i>
Frances Jewett Dunbar,			<i>Buffalo, N. Y.</i>
Helen Dunham,	Ph.B.	79	<i>West Bay City.</i>
Clara E. Dunn,	A.B.	92	<i>Lapeer.</i>
Marion Ida Durand,	Ph.B.	93	<i>Ann Arbor.</i>
Harry Shurtleff Durant,	Ph.B.	30	<i>Chicago, Ill.</i>
Lucy Jeannette Durfee,	A.B.	32	<i>Decatur, Ill.</i>
Charles Edward Dvorak,	Ph.B.	60	<i>Chicago, Ill.</i>
Minnie Veronica Dwyer,	B.L.	87	<i>Ann Arbor.</i>
Benjamin Robison Eaman,			<i>Detroit.</i>
Francis Dwight Eaman,	B.L.	87	<i>Detroit.</i>
Laura Lucile Eames,	B.S.	24	<i>Ann Arbor.</i>
Frances Elizabeth Earhart,	B.L.	22	<i>Karns City, Pa.</i>
Gertrude Earhart,	B.L.	12	<i>Duluth, Minn.</i>
Lida Belle Earhart,	B.S.	60	<i>Mankato, Minn.</i>
Dan Earle,	A.B.		<i>South Haven.</i>
Orrin Kinsley Earl,	A.B.	39	<i>Chicago, Ill.</i>
Allen Jay Easton,	B.S.	94	<i>Lapeer.</i>
Mary Newell Eaton,	A.B.	72	<i>Grand Rapids.</i>
Daniel Irvin Elder,	B.S.	17	<i>Indianapolis, Ind.</i>
John Nicholas Ellerman,	Ph.B.	4	<i>Yankton, S. Dak.</i>
Gilbert Alfred Elliott,	B.S.		<i>South Bend, Ind.</i>
John Alexander Elliott,	B.S.	26	<i>Des Moines, Ia.</i>
Ruth Ellis,	Ph.B.		<i>Calumet.</i>
Mattha Louise Emlaw,			<i>Grand Haven.</i>
Lloyd Hugo Eriesson,	Ph.B.	4	<i>Crookston, Minn.</i>
Mary Jane Erwin,			<i>Farmington.</i>
Charles Ettenson,	B.S.	21	<i>Leavenworth, Kan</i>
Curtis Evans,	A.B.	48	<i>Rewey, Wis.</i>
James Allison Evans,	B.S.	95	<i>Erie, Pa.</i>
Tessa Elizabeth Evans,	B.L.	30	<i>Iron Mountain.</i>
Valerius Theodore Evans,	A.B.		<i>Ludington.</i>

Ennie Everett,	B.S.		<i>Cripple Creek, Col.</i>
John Phelps Everett,	A.B.	56	<i>Ann Arbor.</i>
Walter Anthony Eversman,	Ph.B.	63	<i>Toledo, O.</i>
Benjamin George Ewald,	A.B.	84	<i>Benton Harbor.</i>
Charles Jefferson Ewald,	A.B.	51	<i>Benton Harbor.</i>
Edith Gertrude Fales,	Ph.B.	92	<i>Detroit.</i>
Gertrude Claire Falk,	Ph.B.	29	<i>Howell.</i>
Florence Fallass,	Ph.B.	54	<i>Grand Rapids.</i>
Frank Rollin Fauver,	Ph.B.		<i>Elyria, O.</i>
Philip Pearl Farnham, Jr.,	A.B.	63	<i>Brighton.</i>
Frances Indiana Farr,	Ph.B.	20	<i>Grand Haven.</i>
Lillian Mae Farthing,	B.L.	32	<i>Flushing.</i>
John Frederick Feddersen,	A.B.	56	<i>Camanche, Ia.</i>
Clara Sophia Feick,	B.S.	62	<i>Sandusky, O.</i>
Abram Henry Felker,	B.L.	55	<i>Ann Arbor.</i>
Emory Emmet Fennell, A.B.,			
<i>Morgan College,</i>	A.B.		<i>Margaretsville, N. C.</i>
John Alexander Ferguson,	Ph.B.	28	<i>Detroit.</i>
Joseph Hughes Ferguson,	A.B.		<i>Richmond, Mo.</i>
Maude Elliott Ferguson,	Ph.B.	32	<i>White Pigeon.</i>
Edwin Taylor Ferrall,	B.L.		<i>Amboy.</i>
Herbert Louis Ferrand,	A.B.	57	<i>South Grand Rapids.</i>
Mary Ellen Ferris,	Ph.B.	36	<i>Ann Arbor.</i>
Mary Goodrich Field,	B.L.	67	<i>Detroit.</i>
William Joseph Field,	Ph.B.		<i>Detroit.</i>
Robert Burroughs Fields,	Ph.B.	65	<i>Rochelle, Ill.</i>
Mable Wilson Filkins,	A.B.	94	<i>Howell.</i>
Max Finkelstein,	B.S.		<i>Alpena.</i>
Florence Sara Fisher,	A.B.	51	<i>Bay City.</i>
Walter Turner Fishleigh,	B.S.	36	<i>Chicago, Ill.</i>
Clara Gertrude Fitzpatrick,	B.S.	26	<i>Ishpeming.</i>
Richard Louis Flynn,	B.L.	32	<i>Ann Arbor.</i>
Belle Fogo,	A.B.	93	<i>Rochester.</i>
Victoria Margaret Fohey,	Ph.B.	89	<i>Webster.</i>
Lena Mable Foote,	A.B.	29	<i>Charlotte.</i>
Mark Foote,			<i>Grand Rapids.</i>
Charlotte Augusta Forbes,	A.B.	54	<i>Ann Arbor.</i>
Phebe Force,			<i>Saint Joseph, Mo.</i>
Clara Agnes Foster,	A.B.		<i>Detroit.</i>
Walter Seymour Foster,	B.L.	104	<i>Lansing.</i>
Caroline Edith Foulke,	Ph.B.	12	<i>Decatur, Ill.</i>
Dorothy Fowler,	A.B.	60	<i>Des Moines, Ia.</i>
Walter Wright Fox,	Ph.B.	28	<i>Detroit.</i>

Harry Alverson Franck,	B.S.		<i>Flint.</i>
Auguste Richard Frank,	Ph.B.		<i>Chicago, Ill.</i>
Lee Frank,			<i>Chicago, Ill.</i>
Ella Frances Fraser,	B.S.		<i>Detroit.</i>
Bernice Frederick,	A.B.	16	<i>Kansas City, Mo.</i>
Ingeborg Sophia Fredlund,	B.S.	77	<i>Ann Arbor.</i>
Elmer Leslie Freeman,	A.B.	106	<i>Detroit.</i>
Milton Harvey Freeman,	A.B.		<i>Crary Mills, N. Y.</i>
Hugo Abraham Freund,	Ph.B.		<i>Detroit.</i>
John Remington Frew,	B.L.		<i>Coshocton, O.</i>
Frank Frederick Fromyer,	B.L.		<i>North East, Pa.</i>
Alma Caroline Frost,	B.S.		<i>Bay City.</i>
Lena May Frost,	Ph.B.	60	<i>Riverside, Ill.</i>
Lavinia Catherine Fruechtel,	B.L.	101	<i>Saginaw, West Side.</i>
Hester Town Fuller,	Ph.B.	31	<i>Greenville.</i>
Thomas Urban Fuller,	B.L.		<i>Milan.</i>
Wilbur Newton Fuller,	B.S.		<i>Grand Rapids.</i>
Elizabeth Fullerton,	B.L.	30	<i>Cape Girardeau, Mo.</i>
Jura Cadot Fullerton, Jr.,	Ph.B.		<i>Troy, O.</i>
Florence Matie Galpin,			<i>Dixboro.</i>
Maude Alice Gamon, B.S., <i>Wheaton College,</i>	B.S.	60	<i>Wheaton, Ill.</i>
Lloyd Edward Gandy,	Ph.B.	60	<i>Spokane, Wash.</i>
George Edwin Garbutt,			<i>Colon.</i>
Allen Wynand Gardener,	B.S.	29	<i>Detroit.</i>
Isabel Grace Gay,	Ph.B.	32	<i>Owosso.</i>
George Homer Gebby,			<i>Bellefontaine, O.</i>
Henry Mills Gelston,	A.B.	90	<i>Ann Arbor.</i>
Louis Merwin Gelston,	B.S.	62	<i>Ann Arbor.</i>
Willis Lord Gelston,	A.B.	32	<i>Ann Arbor.</i>
Katherine Reeves George,	A.B.	10	<i>Ann Arbor.</i>
Charlotte Gerken,			<i>Ann Arbor.</i>
Ada Mabel Gesley,	B.S.		<i>Detroit.</i>
Marguerite Gibson,	B.L.	109	<i>Chicago, Ill.</i>
Sarah Eleanor Gibson,			<i>Hagerstown, Md.</i>
Lloyd Alonzo Gifford,	B.S.		<i>Chelsea.</i>
Irene Wentworth Gilbert,	B.S.		<i>Ann Arbor.</i>
Selma Gilday,	Ph.B.	34	<i>Monroe.</i>
Grace Estelle Gillespie,	B.L.	80	<i>Tecumseh.</i>
Fredericka Botsford Gillette,			<i>Ann Arbor.</i>
Ella Maud Glaser,	A.B.	68	<i>Ann Arbor.</i>
Charles Baldwin Goddard,			<i>Conneaut, O.</i>
Mary Alice Goddard,	B.L.	92	<i>Ann Arbor.</i>

Effie Godfrey,	B.S.		<i>Ann Arbor.</i>
Mary Morris Godfrey,	A.B.	66	<i>Toledo, O.]</i>
Melanie C. Godfrey,			<i>Ann Arbor.</i>
Flora Luella Goeschel,	B.S.	105	<i>Bay City.</i>
Miriam Deborah Goldman,	Ph.B.	46	<i>Detroit.</i>
Bertha Marion Goldstone,	Ph.B.	77	<i>Saginaw.</i>
Annie Mariada Gonter,			<i>Ann Arbor.</i>
William Arthur Gonter,	A.B.	53	<i>Ann Arbor.</i>
Elizabeth Goodes,	Ph.B.	47	<i>Geneseo, N. Y.</i>
Frederick Russell Gorton,	B.S.	18	<i>Ypsilanti.</i>
Philip Emanuel Graber, M.S., <i>National Normal Univ.,</i>	Ph.B.	78	<i>Genoa, O.</i>
Walter Gradle,	B.L.	80	<i>Chicago, Ill.</i>
Gladys Mary Graham,	A.B.	24	<i>Riverside, Ill.</i>
Ephraim George Gray,	B.S.	32	<i>Ludington.</i>
William Grayson, Jr.,	B.S.	69	<i>Saint Louis, Mo.</i>
Florence Wentworth Greene,	Ph.B.	32	<i>Ann Arbor.</i>
Otto Fairchilds Greene,	B.L.		<i>Greenville.</i>
Burton Otto Greening,	Ph.B.	97	<i>Saint Joseph.</i>
Samuel Edgar Greer, B.S., <i>Lenox College,</i>	A.B.		<i>Sand Spring, Ia.</i>
Lucile Gregory,	Ph.B.	4	<i>Dowagiac.</i>
Marie Greiderer,	B.L.	111	<i>Dundee.</i>
Joseph Greig,			<i>Detroit.</i>
Martha Greiner,	Ph.B.	119	<i>Lisbon.</i>
Charlotte Ruth Greist,			<i>New Haven, Conn.</i>
Wilbur Condit Gross,	A.B.	22	<i>Chicago, Ill.</i>
Gilbert Lafayette Guthrie,	Ph.B.	18	<i>Atchison, Kan.</i>
Loucile Emily Hackett,			<i>Three Rivers.</i>
Huldah Augusta Haenig,	Ph.B.		<i>Ludington.</i>
Florence Hagle,	B.S.	24	<i>Ann Arbor.</i>
Leonard Dixon Haigh,	B.S.	92	<i>Port Huron.</i>
Elbert Edgar Haight,	B.L.	94	<i>Sycamore, Ill.</i>
Herbert John Haire,	A.B.	30	<i>Grand Rapids.</i>
Florence Mooers Hall,	B.L.	110	<i>Chicago, Ill.</i>
Sara Hall,			<i>East Liverpool,</i>
Joseph Dwight Halleck,	B.S.	24	<i>Otsego.</i>
Christine Henrietta Haller,	A.B.	8	<i>Ann Arbor.</i>
Horace Allen Hamilton,	A.B.	30	<i>Charlotte.</i>
Nellie May Hamilton,	Ph.B.	26	<i>Ann Arbor.</i>
Charles Albert Hammond,	B.L.		<i>Collinwood, O.</i>
Arthur Kent Hanchett,	B.L.	30	<i>Big Rapids.</i>
George Stewart Hanley,	Ph.B.		<i>Detroit.</i>

Harris Mathewson Hanshue,	A.B.	32	<i>Lansing.</i>
Martin Hanson,	B.S.	32	<i>Chicago, Ill.</i>
Harriet Harkness,	A.B.	88	<i>Philadelphia, Pa.</i>
Norman Follett Harriman,			<i>Ann Arbor.</i>
Florence Harris,	Ph.B.	60	<i>Lake Linden.</i>
Verna Louise Harris,	A.B.	55	<i>Ann Arbor.</i>
Julia Helena Harrison,	A.B.	32	<i>Paw Paw.</i>
Caroline Campbell Harvey,	B.S.	44	<i>Detroit.</i>
Clara Hasse,	Ph.B.		<i>Muskegon.</i>
Jennie Evalyn Hassett,	B.L.	82	<i>Negaunee.</i>
Frank Arthur Hatch,	Ph.B.	69	<i>Detroit.</i>
Charles Frederic Hately,	B.L.	84	<i>Irondale, O.</i>
Maude Caroline Hathaway,	B.S.	56	<i>Blissfield.</i>
Gertrude Haun,	B.S.	59	<i>Dollar Bay.</i>
Stella Maude Havey,	A.B.	4	<i>Port Huron.</i>
William Sylvester Hazelton,	A.B.	73	<i>Oxford.</i>
Florence May Hazen,	B.L.		<i>LaSalle, Ill.</i>
Julia Wright Heath,	A.B.	62	<i>Chicago, Ill.</i>
Christian Henry Hecker,	A.B.		<i>Detroit.</i>
Lewis Henry Hector,	B.S.	64	<i>Allegheny, Pa.</i>
Florence Hedges,	A.B.	61	<i>Lansing.</i>
Earl Heenan,	A.B.	40	<i>Dryden.</i>
John Helfman,	A.B.		<i>Detroit.</i>
Jessie Josephine Heller,	B.L.	30	<i>Ann Arbor.</i>
William Christel Helmers,	B.L.	62	<i>Leavenworth, Kan.</i>
Constans Alexis Hemborg, A.B., <i>Augustana College,</i>	A.B.	90	<i>Moline, Minn.</i>
Adah Grace Hemingway,	B.L.	83	<i>Hadley.</i>
Dora Davis Henderson,	Ph.B.	60	<i>Jackson.</i>
Nathalia Henne,	B.L.	69	<i>Springfield, Ill.</i>
Alfred Henry,			<i>Marion, Ind.</i>
Ethel Henry,	B.L.		<i>McBride.</i>
Albert Ernest Herrnstein,	B.S.		<i>Chillicothe, O.</i>
William Henry Herrnstein,	B.S.	32	<i>Chillicothe, O.</i>
John Lawrence Hibbard,	A.B.	62	<i>Detroit.</i>
Arthur Pomeroy Hicks,	B.S.	61	<i>Ann Arbor.</i>
Anderson Bonapart Hilderbrand,	B.S.		<i>South Bend, Ind.</i>
Cary LeRoy Hill,	A.B.	63	<i>Chelsea.</i>
Alta Mary Hilliard,	B.L.	90	<i>Mason.</i>
Frederic William Hillyer,	A.B.	97	<i>Grand Rapids.</i>
Elizabeth Alice Hinchey,	Ph.B.	25	<i>Sandusky, O.</i>
John Louis Hindelang,			<i>Chelsea.</i>
Katharine Genevieve Hine,	Ph.B.	69	<i>Tecumseh.</i>

Arthur Joseph Hoare,	A.B.	93	<i>Ludington.</i>
Emma Noble Holbrook,	A.B.	46	<i>LaGrange, Ill.</i>
Lemuel Guy Holbrook,	A.B.	89	<i>Duplain.</i>
Ida Louise Holden,	Ph.B.	56	<i>Detroit.</i>
Abram James Holland,	A.B.	83	<i>Detroit.</i>
Alice Maude Hollister,	B.S.	77	<i>Lake Linden.</i>
Richard Dennis Teall Hollister,	B.S.	34	<i>Ann Arbor.</i>
Ralph Harmon Holmes,	Ph.B.		<i>Chelsea.</i>
Walter Herbert Holsinger,	A.B.	58	<i>Kendallville, Ind.</i>
Frank Sylvester Honberger,	B.L.	30	<i>Sandusky, O.</i>
Edward Potter Hopkins,	A.B.		<i>Lansing.</i>
Robert Milton Hopkins,	A.B.	104	<i>Louisville, Ky.</i>
Ida May Hopson,	B.S.	100	<i>Detroit.</i>
Samuel Horner,			<i>Reed City.</i>
Jessie Margaret Horton,	B.L.	64	<i>Chicago, Ill.</i>
Juliet Grace Horton,	Ph.B.	86	<i>Chicago, Ill.</i>
Clara May Hosie,	A.B.	31	<i>Wayne.</i>
Alice Jeanne Houle,	B.S.	10	<i>Negaunee.</i>
Alfred Maurice Houston,	B.L.	32	<i>Joliet, Ill.</i>
Earle Ingersoll Houston,	A.B.		<i>Marshall.</i>
Mary Frances Houston,	Ph.B.	57	<i>Ann Arbor.</i>
Daniel Peter Housum,	A.B.	3	<i>Decatur, Ill.</i>
Janetta Eveline Howard,	Ph.B.	52	<i>Ionia.</i>
Lillian Elise Howard,	A.B.	56	<i>Ann Arbor.</i>
Jessie Ann Howell,	B.S.	52	<i>Cassopolis.</i>
Mary Fuller Howes,			<i>Decatur, Ill.</i>
Wilhelmina Hoyseth,	Ph.B.	60	<i>Ishpeming.</i>
Monroe Allen Hoyt,	Ph.B.	18	<i>Carroll, Ia.</i>
Edward Godfrey Huber,	B.S.		<i>Ann Arbor.</i>
Maude Hudson,	A.B.	66	<i>Saginaw, West Side.</i>
Charles Augustus Hughes,	B.S.	24	<i>Eaton Rapids.</i>
Florence May Hughes,			<i>Elkhart, Ind.</i>
Harriett Hull,	Ph.B.	92	<i>Lansing.</i>
Helen Marion Hume,	Ph.B.	22	<i>Muskegon.</i>
Enos Franklin Hummel,	B.S.		<i>Aurora, Ill.</i>
Theresa Florence Hummel,	B.S.	27	<i>Houghton.</i>
Mary Zaidee Humphrey,	B.S.	27	<i>Lansing.</i>
William H. Humphrey,	B.L.		<i>Lansing.</i>
Harry Willard Hunt,	Ph.B.		<i>Grand Rapids.</i>
Myrtle Adeline Hunt,	A.B.	75	<i>Moline, Ill.</i>
Irving Benjamin Hunter,	A.B.	56	<i>Ypsilanti.</i>
Charles DuBois Hurrey,	B.S.	91	<i>Ann Arbor.</i>
Clarence Barzillai Hurrey,	B.L.	92	<i>Ann Arbor.</i>

Harriet Adelle Hurrey,	Ph.B.	61	<i>Ann Arbor.</i>
Eleanor Huston,			<i>East Liverpool, O.</i>
Roscoe Burhans Huston,	A.B.	24	<i>Ann Arbor.</i>
Anna Katherine Hutchen- reuther,	A.B.	46	<i>West Bay City.</i>
Frederick Eugene Hutchins,	A.B.	43	<i>Chicago, Ill.</i>
Sophie Elizabeth Hutzell,	B.S.		<i>Ann Arbor.</i>
Ruth Agnes Hyde,	A.B.		<i>Grand Rapids.</i>
Roy Igou,	A.B.	62	<i>Grove City, Ill.</i>
Genevieve Imus,			<i>Ann Arbor.</i>
Elbert Vittum Ingersoll,	Ph.B.		<i>West Bay City.</i>
John George Ingold,			<i>Riga.</i>
Anna Jackson,	B.S.	33	<i>Chicago, Ill.</i>
Henry Francis Jacob,	Ph.B.	109	<i>Watrousville.</i>
Albert Jacobson,	B.S.	4	<i>Chicago, Ill.</i>
Mary Florence Jacoby,	Ph.B.	32	<i>Ann Arbor.</i>
Clara Octavia Jamieson,	A.B.	68	<i>Ann Arbor.</i>
Mark Jampolis,	A.B.	4	<i>Austin, Ill.</i>
Florence Elizabeth Jenkins,	B.S.		<i>Tecumseh.</i>
Estelle Jenney,			<i>Ann Arbor.</i>
Owee Pearl Jenney,	B.L.	91	<i>Ann Arbor.</i>
Jessie Gertrude Jennings,	A.B.	64	<i>Troy.</i>
Robert George Jickling,	B.L.		<i>Flint.</i>
Albert Willehad Valentine Johnson,	B.L.	30	<i>Ironwood.</i>
Julia V. Johnson,	Ph.B.	27	<i>Duluth, Minn.</i>
Margaret Jones,	Ph.B.	54	<i>Ann Arbor.</i>
Wilber Judson,	B.S.	74	<i>Lansing.</i>
Clyde Watkins Jump,	B.S.	88	<i>Plainfield, Ill.</i>
Paula Kahn,			<i>Detroit.</i>
Blanche Pepie Kallman,	B.S.	26	<i>Chicago, Ill.</i>
Marian Clara Kanouse,	Ph.B.	89	<i>Manistee.</i>
Walter Edward Kapp,	A.B.	90	<i>Dubuque, Ia.</i>
Max Emanuel Kaufman,	Ph.B.	88	<i>Saint Louis, Mo.</i>
Louis Ward Keeler,	Ph.B.	92	<i>Mount Clemens.</i>
Leo John Keena,	B.S.	38	<i>Detroit.</i>
Thomas Henry Keeshan,	B.S.	32	<i>Junction City, Kan.</i>
Mildred Hannah Keith,	A.B.	105	<i>Pontiac.</i>
Katherine Margaret Kellas,	Ph.B.	102	<i>Malone, N. Y.</i>
Dora Ione Keller,	B.S.	34	<i>South Bend, Ind.</i>
Harrie W. Kenfield,	B.S.	3	<i>Hastings.</i>
Gertrude Blanche Kennedy,	B.L.	101	<i>AuSable.</i>
Mortimer Bailey Kennedy,	A.B.	30	<i>Peoria, Ill.</i>

Harry Richmond Kern,	B.S.	35	<i>Mattoon, Ill.</i>
Fannye Sawney Kerngood,	B.S.	32	<i>Ann Arbor.</i>
George Washington Killelea,			<i>Seneca, Ill.</i>
Dan Arnold Killian,	Ph.B.	26	<i>Allegan.</i>
Edward Bassett Killian,	Ph.B.	92	<i>Allegan.</i>
Glennett A. Kingsbury,	B.S.	12	<i>Cassopolis.</i>
Zachariah Kinne, Jr.,	A.B.	88	<i>Three Oaks.</i>
Frank Cameron Kinsey,	A.B.	72	<i>Grand Rapids.</i>
Richard Ray Kirk,	B.S.		<i>Detroit.</i>
Willing Dunning Kirk,	B.S.	42	<i>Hartland, Wis.</i>
James Ross McAfee Kirker,	A.B.		<i>Detroit.</i>
Richmond Henry Kirtland,	B.S.	90	<i>Ann Arbor.</i>
Ida Elizabeth Kittredge,	Ph.B.	94	<i>Ann Arbor.</i>
Karoline Kläger,	B.L.	95	<i>Ann Arbor.</i>
John A. Klaverweiden,	B.S.		<i>Chicago, Ill.</i>
Herman Charles Kleene,	Ph.B.		<i>Peoria, Ill.</i>
Adele Louise Klein,	Ph.B.	64	<i>Detroit.</i>
Allen Marshall Kline,	B.L.		<i>Ovid.</i>
Caroline Klingmann,	Ph.B.	25	<i>Ann Arbor.</i>
Carl Otto Kloepper,	A.B.	48	<i>Plymouth, Ind.</i>
Albert Henry Knapp,	B.S.	98	<i>Saint Charles, Minn.</i>
Ezra Charles Knapp,	A.B.	32	<i>Blissfeld.</i>
Robert Keith Knight,	Ph.B.	30	<i>Kalamazoo.</i>
Marguerite Knowlton,	A.B.	76	<i>Ann Arbor.</i>
Ineson James Kohler,	A.B.	67	<i>Lapeer.</i>
Matilda Krebs,	B.L.	31	<i>Neligh, Neb.</i>
Anna Margaret Kremer,	Ph.B.		<i>Detroit.</i>
Amy Lydia Krolik,	B.S.	25	<i>Detroit.</i>
Daisy Alice Kugel,	B.S.	85	<i>Sandusky, O.</i>
Harold Phillip Kuhn,	B.L.		<i>Kansas City, Mo.</i>
Karl Franz Frederick Kurth,	A.B.	90	<i>Detroit.</i>
Sanford Webb Ladd,	A.B.	62	<i>Milford.</i>
Joseph Greenebaum Landauer,	Ph.B.	4	<i>Chicago, Ill.</i>
Laura Arlene Lane,	A.B.	13	<i>Victor, N. Y.</i>
Ralph Chester Lane,	A.B.		<i>Fort Wayne, Ind.</i>
Helen Rose Lang,	B.L.	92	<i>Indianapolis, Ind.</i>
Annie Williams Langley,	B.L.	62	<i>Cleveland, O.</i>
Myrtle Ellen Lare,	Ph.B.	94	<i>Howell.</i>
Morris Sellers Largey,	B. L.	14	<i>Butte, Mon.</i>
John Larsen,			<i>Chicago, Ill.</i>
Emma Ellen Larson,	Ph.B.	24	<i>Calumet.</i>
Adelbert Eugene Lathers,	B.S.	113	<i>Ann Arbor.</i>
Austin Lloyd Lathers,	B.L.		<i>Ann Arbor.</i>

Clarence Case Latta,	A.B.	31	<i>Goshen, Ind.</i>
Nellie Leona LaVigne,	B.S.	31	<i>Champion.</i>
Dean Lawrence,	B.L.		<i>Little Prairie Ronde.</i>
Marion Agnes Lawton,	B.L.	60	<i>Lawton.</i>
Margaret Rachel Layton,	A.B.	91	<i>Bay City.</i>
Clyde Leavitt,	B.L.	61	<i>Bellaire.</i>
Scott Leavitt,	B.L.		<i>Bellaire.</i>
Robert Owen LeBaron,	B.S.	89	<i>Pontiac.</i>
Frederick Lyman Lee,	B.S.		<i>Kansas City, Mo.</i>
Harley Kenneth Legg,	B.S.		<i>Colon.</i>
Fred August Lehman,	B.S.	31	<i>Adrian.</i>
William Jacob Lehman,	Ph.B.	61	<i>Adrian.</i>
William Robert Lemen,	Ph.B.		<i>Hartland.</i>
Emma Lavinia Lenhart,			<i>Bridgman.</i>
Louise Mueller Lenhart,			<i>Bridgman.</i>
Minerva Mabelle Leonard,	Ph.B.	26	<i>Denver, Col.</i>
David J. Levy,	B.S.	30	<i>Kalamazoo.</i>
Lena Louise Lietzau,	B.S.	8	<i>Detroit.</i>
Harry Martin Limbach,	Ph.B.	34	<i>Monument, Col.</i>
Arthur Mayer Lindauer,	B.S.	83	<i>Chicago, Ill.</i>
Julia Maude Liskow,	B.S.		<i>Saginaw, West Side.</i>
Milton Louis Livingston,	Ph.B.		<i>Chicago, Ill.</i>
†Will Russel Lloyd,	B.L.		<i>Catlin, Ill.</i>
Benjamin Chester Loder,	A.B.	26	<i>Lapeer.</i>
Arthur Adolph Loeb,	Ph.B.	66	<i>Chicago, Ill.</i>
Gilberta Logg,	A.B.	20	<i>Grand Rapids.</i>
Marea Daisy Longwell,	B.L.	62	<i>Paw Paw.</i>
Mary Lowell,	B.L.		<i>Union City.</i>
Fred Ephraim Low,	A.B.		<i>Chicago, Ill.</i>
Frank MacDonald Lowe,	B.S.		<i>Chicago, Ill.</i>
Mary Elizabeth Lowell,	B.L.	56	<i>Jonesville.</i>
Abe Lowenhaupt,	B.L.	96	<i>Mount Vernon, Ind.</i>
Frederick Low Lowrie,	Ph.B.	65	<i>Detroit.</i>
William Arnold Ludwig,	B.S.	86	<i>Ann Arbor.</i>
Blanche Lurton,	B.L.	64	<i>Bloomington, Ill.</i>
Lulu Veronica Lusby,	Ph.B.	95	<i>Ann Arbor.</i>
James Duncan Knapp Lyman,	A.B.		<i>Norwalk, O.</i>
Carolyn Blount Lynd,	A.B.	103	<i>Lockport, Ill.</i>
Lily Virginia Lyon,	A.B.		<i>Detroit.</i>
Sidney Trofsky Lyon,	Ph.B.	23	<i>Chicago, Ill.</i>
Elias Parke Lyons,	A.B.	106	<i>Ann Arbor.</i>
Marshall James Lyons,	B.S.		<i>Ludington.</i>
Mary Eveline Lyons,	Ph.B.	92	<i>Ludington.</i>

Angela Ida Maas,	Ph.B.		<i>Ann Arbor.</i>
Eleanor Grace Mabley,	Ph.B.	37	<i>Jackson.</i>
Calvin McCarroll,	A.B.	32	<i>Ann Arbor.</i>
Rose Cook McClurkin,	B.L.	92	<i>Princeton, Ind.</i>
Beatty Zentz McCollough,	A.B.	90	<i>Kirkville, Ia.</i>
Henry Goodrich McCormick,	A.B.	12	<i>Normal, Ill.</i>
Minnie McCormick,	B.S.	79	<i>Owosso.</i>
Nellie Mabel McCormick,	Ph.B.	26	<i>Owosso.</i>
Lizzie May McCracken,	B.L.	56	<i>Farmington.</i>
Nellie Norton McCracken,			<i>Farmington.</i>
Francis Joseph McCue,	Ph.B.	60	<i>Mount Pleasant.</i>
Lester Angus McDiarmid,			<i>Bowne.</i>
Douglas MacDuff,	Ph.B.	8	<i>Flint.</i>
John Seymour McElligott,	Ph.B.	92	<i>Manistee.</i>
Lila McGaughan,	Ph.B.	22	<i>Bay City.</i>
Clyde McGee,	B.S.	32	<i>Farmington.</i>
Edwin McGinnis,	B.L.	64	<i>Chicago, Ill.</i>
Samuel Alanson McGonigal,			<i>Lansing.</i>
Mabel Estelle McGraw,	A.B.	60	<i>Dallas, Tex.</i>
James Murray McGregor,			<i>Detroit.</i>
Margaret Annie McGregory,	A.B.	4	<i>Indianapolis, Ind.</i>
Florence Margaret McHugh,	Ph.B.	99	<i>Galena, Ill.</i>
Donald Ross Mac Intyre,	B.S.		<i>Flint.</i>
Elizabeth Estella McKay,	Ph.B.	38	<i>Caro.</i>
Robert Cutler McKeighan,	Ph.B.	92	<i>Saint Louis, Mo.</i>
Sara Louise McKenzie,	A.B.	100	<i>Ann Arbor.</i>
Mary McKinney,	Ph.B.		<i>Bay City.</i>
Walter Lee McLauchlan,	B.S.	57	<i>Chicago, Ill.</i>
Earl James McLaughlin,	A.B.		<i>Detroit.</i>
Grace Redpath McLean,	A.B.	56	<i>Colorado Springs, Col.</i>
John Frederick McLean,	B.L.	91	<i>Menominee.</i>
Donald James McMahan,	Ph.B.		<i>Ludington.</i>
Fraley McMillan,	Ph.B.		<i>Berlaimont.</i>
Evelyn Olive MacNaughton,	Ph.B.		<i>Ann Arbor.</i>
Ward J. MacNeal,	B.S.	71	<i>Ann Arbor.</i>
Mary Josephine McNerney,	A.B.		<i>Port Huron.</i>
Walter Carson McNiel,	A.B.		<i>Ann Arbor.</i>
Mabel Macqueen,	B.L.	92	<i>Perry.</i>
Georgena Amy McSweeney,	A.B.		<i>Detroit.</i>
Ralph Van Deman Magoffin,	A.B.	38	<i>Holton, Kan.</i>
Ellen Viola Maher,			<i>Fort Dodge, Ia.</i>
Georgia Manning,	A.B.		<i>Detroit.</i>
Margaret McFarlane Manning,	Ph.B.		<i>Detroit.</i>

Alice Cary Manwaring,	B.S.	77	<i>Ann Arbor.</i>
Otto Charles Marckwardt,	Ph.B.	68	<i>Grand Rapids.</i>
Frank Burr Marsh,	Ph.B.	30	<i>Big Rapids.</i>
Anna Elizabeth Marshall,	A.B.		<i>Marshall.</i>
Edward Marshall,	B.L.		<i>Ross View, Tenn.</i>
Thomas Maitland Marshall,	B.L.	92	<i>Ann Arbor.</i>
William J. Marshall,			<i>Ann Arbor.</i>
Cora Oliver Martin,	B.L.	102	<i>Decatur, Ill.</i>
Mabelle Willcox Mason,			<i>Gladstone.</i>
Margaret Delia Mason,	B.L.	94	<i>Muskegon.</i>
Stephen Codding Mason, Jr.,			<i>Chicago, Ill.</i>
Esther Pearl Matchett,	B.S.	56	<i>Ann Arbor.</i>
Lucile Virginia Matchett,	A.B.	35	<i>Ann Arbor.</i>
Charles Salmon Matthews,	A.B.	44	<i>Pontiac.</i>
Clifford Carnot Harrison Matthews,			<i>Milford.</i>
Jacob Scott Matthews, Jr.,	Ph.B.	65	<i>Chicago, Ill.</i>
Percy Fulford Matthews,	B.L.	32	<i>Ontario, Cal.</i>
Walter Royal Matthews,	B.L.	71	<i>Ann Arbor.</i>
Gertrude Belle Mautner,	Ph.B.		<i>Saginaw.</i>
George Wendell Maxey,	B.L.	32	<i>Forest City, Pa.</i>
Buichi Mayehateke, <i>K'ei</i> <i>College,</i>	B.L.		<i>Okayama, Japan.</i>
Thomas Gentry Mayhugh,			<i>East Lynn, Ill.</i>
Carl Francis Mehlhop,	B.S.	49	<i>Dubuque, Ia.</i>
Walter Anton Meier,	A.B.		<i>Monroe.</i>
Augusta Barbara Meiser,	Ph.B.	42	<i>Detroit.</i>
Royal Loren Melendy,	A.B.	48	<i>Howell.</i>
William Melville,			<i>Woodmere.</i>
Frances Dow Merchant,			<i>Petoskey.</i>
Emilie C. Mertz,	Ph.B.	56	<i>Rock Island, Ill.</i>
John William Mertz,	Ph.B.		<i>Fairfield Centre, Ind.</i>
Harry Miltz Mess,	Ph.B.	17	<i>Benton Harbor.</i>
Elisabetha Meyer,	Ph.B.	103	<i>Grand Rapids.</i>
Henry Maurice Milburn,	B.S.		<i>Detroit.</i>
Anna Wykes Miller,	B.L.	59	<i>Grand Rapids.</i>
Gertrude Agnes Miller,	A.B.	45	<i>Bay City.</i>
Jessie Fredreka Miller,	Ph.B.	59	<i>Adrian.</i>
Katharine Cook Miller,	B.L.	89	<i>Ann Arbor.</i>
Scott Albert Miller,	A.B.	60	<i>Ash Grove, Mo.</i>
William George Miller,			<i>Pana, Ill.</i>
Malvina Amanda Milligan,	B.S.	23	<i>Calumet.</i>
Clarabel Milliman,	Ph.B.	36	<i>Rochester, N. Y.</i>
David Williams Mills,	B.L.	57	<i>Marysville.</i>

Laura Isadore Mills,	Ph.B.	31	<i>Ann Arbor.</i>
Lauren Elmer Mills,	Ph.B.	32	<i>Ann Arbor.</i>
Walter Herbert Mills,	B.S.	41	<i>Decatur, Ill.</i>
Nellie Dustan Mingay,	Ph.B.	89	<i>Chelsea.</i>
William Comer Mitchell,	A.B.	67	<i>Martinsville, Ind.</i>
Mabel Agnes Mitts,	Ph.B.	112	<i>Saginaw.</i>
Francis Peter Monaghan,	B.L.		<i>Alpena.</i>
Lucy Evelyn Monroe,			<i>South Haven.</i>
Robert Smith Montague,	Ph.B.		<i>Caro.</i>
Leslie Johnson Montgomery,	Ph.B.	92	<i>Southfield.</i>
Edgar McClelland Moore,	B.S.	30	<i>North Farmington.</i>
Frank Lea Moore,	B.S.		<i>Bay City.</i>
John Champlin More,	A.B.		<i>Grand Rapids.</i>
Grace Morehouse,	Ph.B.	26	<i>Big Rapids.</i>
Clarence Burton Morrill,			<i>Battle Creek.</i>
Alice Frances Morris,			<i>Mattawan.</i>
Lucile Crane Morris,	B.L.	92	<i>Big Rapids.</i>
Roger Sylvester Morris,	A.B.	92	<i>Ann Arbor.</i>
Barbara Alexandrina Morrison,	B.S.	62	<i>Hancock.</i>
Rufus Rhines Morse,	B.S.		<i>Belding.</i>
Frank Sharp Morsman,	A.B.	62	<i>Omaha, Neb.</i>
Eloise Morton,	Ph.B.	92	<i>Chelsea.</i>
Philip Wilder Mothersill,	A.B.	63	<i>Ann Arbor.</i>
Carrie Bliss Mowry,	A.B.	90	<i>Saginaw.</i>
Max Emil Mueller,	B.S.	32	<i>Chicago, Ill.</i>
James Frederick Munson,	B.S.	31	<i>Traverse City.</i>
Agnes Murdock,	A.B.		<i>Ann Arbor.</i>
Clay Bannon Murfin,	Ph.B.		<i>Ann Arbor.</i>
Margaret Parthenia Murrell,	A.B.	40	<i>Decatur, Ill.</i>
Elmer A. Myers,	B.S.	22	<i>Greenville.</i>
Anna Maud Nankervis,	B.L.		<i>Ishpeming.</i>
Max Edward Neal,	B.L.	56	<i>Coldwater.</i>
Thomas Emery Newcomer,	A.B.	41	<i>Mount Morris, Ill.</i>
Aaron G. Newell,	B.L.	29	<i>Yale.</i>
Alice Horton Newman,	B.S.		<i>Jackson.</i>
Frances Newman,			<i>Jackson.</i>
Daniel Nicolas Nies,			<i>Hamburg, Ia.</i>
Eva Lula Niles,	Ph.B.	98	<i>Ann Arbor.</i>
Louis Nockels,			<i>Carroll, Ia.</i>
Bessie Amalie North,	Ph.B.	56	<i>Lake Linden.</i>
Arthur Holmes Norton,			<i>Ann Arbor.</i>
Martha Lovisa Norton,			<i>Ann Arbor.</i>
Mary Dorothea Nourse,			<i>Grand Rapids.</i>

Ralph Clarke Nowland,			<i>Leadville, Col.</i>
Julius Jerry Nufer,	B.S.	21	<i>Whitehall.</i>
Bert Verne Nunneley,	B.S.		<i>Mount Clemens.</i>
Merrill Joseph Ober,	B.S.	90	<i>Sandy Hill, N. Y.</i>
Bertha von Verson O'Brien,	B.L.	39	<i>Detroit.</i>
Richard Clare O'Brien,	B.S.		<i>Scranton, Pa.</i>
Bernard Joseph O'Neill, Jr.,	B.S.		<i>Dubuque, Ia.</i>
Genevieve Delony O'Neill,	A.B.	53	<i>Ann Arbor.</i>
Inez Orbison,	A.B.		<i>Sidney, O.</i>
Donald Cornell Osborn,	B.L.	20	<i>Kalamazoo.</i>
Lloyd Lynn Osborn,	A.B.	23	<i>Washington.</i>
Josephine Gertrude Osborne,	Ph.B.	56	<i>Lansing.</i>
James Edward O'Sullivan,	B.S.	30	<i>Port Huron.</i>
Jessie Irene Otto,	A.B.		<i>Charlotte.</i>
Roy Melbourne Overpack,	B.L.	4	<i>Manistee.</i>
Alice Moseley Paddock,	Ph.B.	66	<i>Moline, Ill.</i>
Henriette Pagelsen,			<i>Grand Haven.</i>
Fannie Vera Pailthorp,	B.L.		<i>Petoskey.</i>
Faye Palmer,	A.B.		<i>Chelsea.</i>
Gertrude Esther Palmer,	A.B.		<i>Ann Arbor.</i>
Jessie Mabel Palmer,	Ph.B.	100	<i>Duluth, Minn.</i>
Leigh G. Palmer,	A.B.		<i>Chelsea.</i>
Mabel Esther Palmer,	B.L.	107	<i>Ann Arbor.</i>
Mary Alberta Palmer,	B.S.	26	<i>Ann Arbor.</i>
Susie Georgina Palmer,	A.B.		<i>Ann Arbor.</i>
Edward Foster Parker,			<i>Bowling Green, O.</i>
Mary Adelaide Parker,	Ph.B.	56	<i>Ypsilanti.</i>
Cora Josephine Parkhurst,	A.B.	81	<i>Barnard, Vt.</i>
Linus Scott Parmelee,	B.S.	92	<i>Charlevoix.</i>
†Christopher Gregg Parnell,	B.L.	30	<i>Calumet.</i>
Hugh Morton Parrish,	A.B.	32	<i>Naples, N. Y.</i>
Hartley Curtis Parsons,			<i>Chardon, O.</i>
Annie Arletta Pearce,	Ph.B.	67	<i>Lake Linden.</i>
Floyd Odell Pease,			<i>Flushing.</i>
Roy Romanzo Peck,	A.B.	9	<i>South Bend, Ind.</i>
William Alfred Peck,	B.L.		<i>Allegan.</i>
Carl Homer Pelton,	A.B.	97	<i>Oakwood.</i>
Effie Mildred Penfield,	B.L.		<i>Perrinton.</i>
Walter Scott Penfield,	A.B.	96	<i>Washington, D. C.</i>
Olive May Pepper,	B.S.	21	<i>Ann Arbor.</i>
Edith Marion Perrigo,	Ph.B.	31	<i>Allegan.</i>
Oliver Winfred Perrin,	B.L.	51	<i>Clyde.</i>
Vive Bird Perrin,	Ph.B.	15	<i>Detroit.</i>

Frank Peshick,	B.L.	61	<i>Saginaw.</i>
Florence Peters,	Ph.B.	22	<i>Ann Arbor.</i>
Sybil Matilda Pettee,	Ph.B.	78	<i>Ann Arbor.</i>
Benjamin Rice Phelps,	Ph.B.	60	<i>Greenville.</i>
Maud Phillips,			<i>Ann Arbor.</i>
Julia Magruder Phillips,	A.B.	50	<i>Leavenworth, Kan.</i>
Nellie Electa Phillips,	Ph.B.		<i>Fenton.</i>
Lue Della Pickering,			<i>Boone, Ia.</i>
Ellen Louise Piel, B.L., <i>Earl-</i>			
<i>ham College,</i>	B.L.	90	<i>Vincennes, Ind.</i>
John Lamond Pierce,	Ph.B.	55	<i>Flint.</i>
Edward William Pinney,	B.L.		<i>Cass City.</i>
Walter Boughton Pitkin,	A.B.	88	<i>Detroit.</i>
Sadie Augusta Platt,	Ph.B.	95	<i>Saint Joseph.</i>
Raymond Lucas Pleak,	B.L.	5	<i>Greensburg, Ind.</i>
Lettie Jeannette Poe,	B.L.	92	<i>Ashland, O.</i>
Henry Lebrun Poinier,	A.B.	32	<i>Detroit.</i>
Jane Viola Pollack,	Ph.B.	66	<i>Chicago, Ill.</i>
Louis Earl Pomeroy,	B.S.	19	<i>Holly.</i>
Helen Post,	B.L.		<i>Detroit.</i>
Burton Calvin Poston,	B.L.		<i>Logan, O.</i>
Arthur Morse Potter,	A.B.		<i>Central City, Col.</i>
Frank Fraser Potter,	A.B.	23	<i>Mount Pleasant.</i>
Kennedy Loomis Potter,	B.L.	26	<i>Jackson.</i>
†Frank Tuthill Potts,			<i>Lacon, Ill.</i>
Mary Rebecca Powers,	Ph.B.	70	<i>Hastings.</i>
William Prakken, A.B., <i>Hope</i>			
<i>College,</i>	Ph.B.	90	<i>Holland.</i>
Florence Beulah Schuyler Pratt,	B.S.		<i>Ann Arbor.</i>
John Harcourt Prentis,	B.L.	86	<i>Detroit.</i>
Albert F. Probst,	B.L.	25	<i>Ann Arbor.</i>
Lindley Pyle,	B.S.	61	<i>Willowdale, Pa.</i>
Anna Mae Quello,	B.L.	49	<i>Calumet.</i>
Irving Tomlinson Raab,	A.B.	100	<i>Flint.</i>
Harris Phelps Ralston,	B.S.		<i>Mayville.</i>
Ray Arah Randall,	B.S.	88	<i>Tekonsha.</i>
Mabelle Fitz Randolph,			<i>Toledo, O.</i>
Clifton Beach Rawlinson,	B.L.		<i>Grand Rapids.</i>
Alonzo Herbert Raymond,	A.B.	80	<i>Detroit.</i>
Rena Bowne Raymond,	A.B.	104	<i>Ann Arbor.</i>
Hannah Dell Read,	Ph.B.	59	<i>Shenandoah, Ia.</i>
James Monroe Reasoner,	A.B.	60	<i>Lausling.</i>
Robert Uriah Redpath,	Ph.B.	29	<i>Petoskey.</i>

Arthur Patterson Reed,	B.S.	60	<i>Livonia, N. Y.</i>
Howard Sprague Reed,			<i>North East, Pa.</i>
James Ross Reed,	B.S.		<i>West Mill Creek, Pa.</i>
Myrtle Louise Reese,	Ph.B.		<i>Jackson.</i>
Charles Hobrough Reid,	.		<i>Elgin, Ill.</i>
Carrie Adelaide Reynolds,	B.S.		<i>Tompkins.</i>
Grace Adeline Reynolds,	B.S.		<i>Detroit.</i>
Jessie Mae Reynolds,	Ph.B.	55	<i>Grand Haven.</i>
Anna Louise Rhodes,	Ph.B.	81	<i>Ada.</i>
Burt Clements Rice,			<i>Ann Arbor.</i>
Louise Emily Richard,			<i>Ann Arbor.</i>
Howard Richardson,	B.S.	59	<i>Saginaw.</i>
Ruby Ella Richardson,	Ph.B.	88	<i>Detroit.</i>
Henry Jasper Richmond,	A.B.	36	<i>Hollister.</i>
Harry Rickel, L.L.B.,			<i>Detroit.</i>
Jesse Jay Kicks,	B.S.	62	<i>Taylorville, Ill.</i>
Elizabeth Secor Rider,	Ph.B.		<i>Bay City.</i>
Emanuel Ernest Rimbach,	Ph.B.		<i>Elyria, O.</i>
Florence Edith Ringle,	Ph.B.	64	<i>South Bend, Ind.</i>
Clarence Bingham Ripley,	B.S.	78	<i>Hinsdale, Ill.</i>
Edwin Shepherd Ripley,	Ph.B.	61	<i>Hinsdale, Ill.</i>
Walter John Risley,	B.S.	109	<i>Logan, O.</i>
Ida Estelle Roberts,	B.L.	87	<i>Flushing.</i>
Marian Stevens Roberts,	A.B.	52	<i>Traverse City.</i>
Christine Grace Robertson,	A.B.	102	<i>Detroit.</i>
Georgia Oriana Robertson,			<i>Kansas City, Mo.</i>
Jessie May Robertson,	Ph.B.	87	<i>Petoskey.</i>
Harry Milton Robins,	A.B.	92	<i>Whitmore Lake.</i>
Hugo Guy Robinson,	Ph.B.	38	<i>Detroit.</i>
John Sherman Robinson,	A.B.		<i>Mansfield, O.</i>
Thomas Linton Robinson,	Ph.B.	102	<i>Ravenna, O.</i>
Clara Roe,			<i>Ann Arbor.</i>
Jessie Louise Roe,	A.B.	34	<i>Battle Creek.</i>
Algenore Isabelle Roehm,	B.S.	26	<i>Calumet.</i>
Louise Marie Roesch,	B.S.	20	<i>Chicago, Ill.</i>
Bessie Cotter Ronan,	Ph.B.	63	<i>Ann Arbor.</i>
Mary Louise Rosenstret,	Ph.B.		<i>Freeport, Ill.</i>
Mabel Eugenia Ross,	A.B.		<i>Battle Creek.</i>
Isaac John Rousseau,			<i>Cape Town, South Africa.</i>
George Peters Rowell,	Ph.B.		<i>Goshen, Ind.</i>
Elizabeth Morrison Rowland,	A.B.	30	<i>Grand Rapids.</i>
Abbie E. Roys,	B.S.	10	<i>Ann Arbor.</i>
Ralph Loveland Roys,	Ph.B.	105	<i>Saginaw.</i>

Fred McKerny Ruby,	B.L.		<i>Union City, Ind.</i>
Rose Ella Rulison,	B.L.	53	<i>Ann Arbor.</i>
Lucy Hayes Russell,	B.L.	84	<i>Hart.</i>
William David Russell,			<i>Detroit.</i>
Camilla Teresa Ryan,	Ph.B.	36	<i>Ann Arbor.</i>
James Albert Ryan,			<i>Dubuque, Ia.</i>
Lillian Keal Sabine,	Ph.B.		<i>Detroit.</i>
Samuel Jefferson Sackett,	B.S.		<i>Ann Arbor.</i>
Ada Murray Safford,	Ph.B.	60	<i>Plymouth.</i>
Etta Louise Salliotte,	B.S.		<i>Ecorse.</i>
Roy Wesley Sanner,			<i>Decatur, Ill.</i>
Charlotte Hale Sargeant,	Ph.B.	44	<i>Detroit.</i>
Martha Sargent,	B.S.	14	<i>Toledo, O.</i>
Dorothy Mae Sass,	B.S.	29	<i>Chicago, Ill.</i>
Mina Ruth Savage,			<i>Grand Rapids.</i>
Wirt Ira Savery,	B.S.	60	<i>Salem.</i>
Elsie Louise Sawyer,	Ph.B.	14	<i>Joliet, Ill.</i>
Margaret Agnes Scallon,	B.S.	60	<i>Hancock.</i>
Julia Catherine Schacht,	B.L.	70	<i>Erie, Pa.</i>
Samuel Schaefer,	B.S.	13	<i>Wykoff, Minn.</i>
Ida Marie Schaible,	B.L.	63	<i>Ann Arbor.</i>
Otto Sorg Schairer,	B.S.	58	<i>Saline.</i>
Lillian Grace Scheer,	B.S.		<i>Saint Joseph.</i>
Philip Louis Schenk,	A.B.	32	<i>Ann Arbor.</i>
Edith Louise Scheurman,	B.S.	30	<i>Saginaw.</i>
Guy Burton Schiller,	Ph.B.	87	<i>Niles.</i>
George Fontaine Schmid,	Ph.B.	40	<i>Chicago, Ill.</i>
Emily Elizabeth Schneidt,	Ph.B.		<i>Muskegon.</i>
Katherine Schroeder,	B.L.	47	<i>Calumet.</i>
Daniel Dwight Schurtz,	A.B.	16	<i>Ann Arbor.</i>
Vera Zoe Schurtz,	A.B.	88	<i>Ann Arbor.</i>
Sophie Margaret Schwarz,	Ph.B.	104	<i>Aurora, Ill.</i>
Louise Schweitzer,	B.S.	8	<i>Grand Rapids.</i>
Clara Marie Scott,	B.S.	92	<i>Vicksburg.</i>
Ruth Gage Scott,	Ph.B.	42	<i>Duluth, Minn.</i>
Daniel McGregor Scotten,	B.L.	30	<i>Detroit.</i>
Laura Kinne Seeley,	Ph.B.	44	<i>Caro.</i>
Roy Wood Sellers,	B.S.		<i>Pinnebog.</i>
Esther Seltzer,			<i>Ann Arbor.</i>
George Ebbert Seney, Jr.,	B.L.		<i>Toledo, O.</i>
Elisha Sipke Sevensma,	A.B.	36	<i>Grand Rapids.</i>
Arthur Christian Seyfarth,	B.L.	30	<i>Blue Island, Ill.</i>
Mary Stewart Seymour,			<i>Flint.</i>

Hubert Chester Sharp,	B.L.		<i>Saticoy, Cal.</i>
Jessie Josephine Shaw,			<i>Charlotte.</i>
Wilfred Byron Shaw,	Ph.B.		<i>Adrian.</i>
Kirk Shawgo,	B.L.	87	<i>Quincy, Ill.</i>
Francis Duncan Shenk,	B.S.	3	<i>Erie, Pa.</i>
James Frank Shepherd,	B.S.		<i>Cheboygan.</i>
Gem Sherman,	A.B.	39	<i>Marquette.</i>
Elizabeth Loretta Sherman,	Ph.B.	98	<i>Muskegon.</i>
Clark William Shipman,	B.L.	58	<i>Corunna.</i>
Frederic Barnett Shoaff,	Ph.B.		<i>Fort Wayne, Ind.</i>
Thomas Trufant Shoemaker,	Ph.B.	90	<i>Mount Clemens.</i>
Charles Cadet Shoyer,	B.L.	62	<i>Leavenworth, Kan.</i>
Minnie Anna Silverson,	A.B.		<i>New Ulm, Minn.</i>
Harold Leon Simpson,	B.S.		<i>Adrian.</i>
Charles Sisam,	Ph.B.	28	<i>Sloan, Ia.</i>
Ole O. Skalet,			<i>Rolla, N. Dak.</i>
Charles Henry Slater,	Ph.B.	88	<i>Hinckley, Ill.</i>
David Henry Slawson,	B.S.		<i>Greenville.</i>
Nathaniel Ellmaker Slaymaker,	A.B.		<i>Detroit.</i>
Genevieve Sloan,	Ph.B.	90	<i>Chicago, Ill.</i>
Harrison Standish Smalley,	A.B.	97	<i>Chicago, Ill.</i>
Carl Enos Smith,	B.S.	3	<i>Franklin Grove, Ill.</i>
Edna Smith,			<i>Ann Arbor.</i>
Edward Dumont Smith,	B.S.	95	<i>Nashville.</i>
Esther Anna Smith,	A.B.		<i>Saginaw.</i>
Eva Lenore Smith,	Ph.B.		<i>Ann Arbor.</i>
Grace Smith,	Ph.B.		<i>Ann Arbor.</i>
Herbert Caldwell Smith,	Ph.B.	47	<i>Evanston, Ill.</i>
Laurence Worthington Smith,	A.B.	4	<i>Ionia.</i>
Lena Rogers Smith,	A.B.	27	<i>Lansing.</i>
Leslie Gifford Smith,	Ph.B.	77	<i>Ann Arbor.</i>
Lottie Lee Smith,	A.B.	31	<i>Lansing.</i>
Mary Moody Smith,	Ph.B.	82	<i>Chicago, Ill.</i>
Mildred Lucile Smith,	Ph.B.		<i>Ann Arbor.</i>
Stephen Herbert Smith,	Ph.B.		<i>Schoolcraft.</i>
Tracy Scovill Smith,	A.B.		<i>Pontiac.</i>
Zoe Worthington Smith,	A.B.	16	<i>Philadelphia, Pa.</i>
Charles Frederick Smurthwaite,	Ph.B.		<i>Manistee.</i>
Etta Northey Snell,	Ph.B.	23	<i>Hancock.</i>
Grace Anna Snitseler,	A.B.		<i>Grand Rapids.</i>
John Henry Snook,	A.B.	51	<i>Rochester.</i>
Neil Worthington Snow,	B.S.	26	<i>Detroit.</i>
Edna Gai Solis,	B.S.	27	<i>Hancock.</i>

Leola Clark Somers,			<i>Chillicothe, O.</i>
Edward Sonnenschein,	B.S.	8	<i>Chicago, Ill.</i>
Thomas Marshall Spaulding,	A.B.	25	<i>Saint Johns.</i>
Mary Justina Spottswood,	A.B.	68	<i>Winnebago, Ill.</i>
Vere Nutting Sprague,			<i>Orange, Mass.</i>
Robert Edmund Springett,			<i>Almont.</i>
Maude Brown Squier,			<i>Jerseyville, Ill.</i>
Joseph Gardner Standart,			<i>Detroit.</i>
William Colburn Standish,	Ph.B.		<i>Detroit.</i>
Alza Starrett,	Ph.B.		<i>Muskegon.</i>
Lilian Anna Steele,	A.B.	92	<i>Maywood, Ill.</i>
Mary Salome Steinmetz,	B.I.	104	<i>Philadelphia, Pa.</i>
Paul Frederick Steketee,	B.L.	10	<i>Grand Rapids.</i>
Mary Elizabeth Stellwagen,	B.L.		<i>Wayne.</i>
David Louis Stern,	B.S.	47	<i>Chicago, Ill.</i>
Don Search Stevens,	B.L.	40	<i>Ann Arbor.</i>
Herman Campbell Stevens,	B.S.	57	<i>Elyria, O.</i>
Herman LeRoy Stevens,	Ph.B.	116	<i>Port Huron.</i>
Bertha Stewart,	B.L.	27	<i>Flint.</i>
Sybil Stewart,	Ph.B.	32	<i>Wardner, Idaho.</i>
Imogene Stimers,			<i>Ann Arbor.</i>
Lyman Edgar Stoddard,	Ph.B.	20	<i>Bay City.</i>
Carrie Lucile Stone,	A.B.	40	<i>Ann Arbor.</i>
Luella Wooster Stone,			<i>Gloversville, N. Y.</i>
Clara Dorothy Stonebraker,	Ph.B.	91	<i>Bay City.</i>
Grace Alma Strang,	A.B.	62	<i>Ypsilanti.</i>
James Strasburg,	Ph.B.	36	<i>Chicago, Ill.</i>
Howard Streeter,	A.B.	47	<i>Calumet.</i>
Nina Streeter,	Ph.B.	26	<i>Calumet.</i>
Jessie Louise Strong,	Ph.B.		<i>Adrian.</i>
Orno Dale Strong,	Ph.B.	96	<i>Tacoma, Wash.</i>
Bertha Sabin Stuart,	Ph.B.	32	<i>Ann Arbor.</i>
Donald Clive Stuart,	A.B.		<i>Detroit.</i>
Magdalena Stukey,			<i>Bryan, O.</i>
Alice Kerr Sturm,	B.S.	55	<i>Saline.</i>
Georgie Suber,	B.S.	105	<i>Los Angeles, Cal.</i>
Margaret Mary Sullivan,	Ph.B.	3	<i>Niles.</i>
Elizabeth Sundstrom,	B.S.	58	<i>Trenton.</i>
Carolina Auguste Supe,	B.S.		<i>Sault Ste. Marie.</i>
Clarence Eugene Sutliff,	B.L.	27	<i>Detroit.</i>
William Maynard Swan,	Ph.B.	73	<i>Detroit.</i>
Norman Sweat,	Ph.B.	63	<i>Ann Arbor.</i>
Everett Martin Sweeley,	B.S.		<i>Sioux City, Ia.</i>

Elizabeth Blanche Swift,	A.B.	90	<i>Battle Creek.</i>
Frank Stone Swift, B.S., <i>Olivet College,</i>			<i>Olivet.</i>
Luella May Swift,	Ph.B.		<i>Ann Arbor.</i>
Grace Isabel Swindler,	A.B.	106	<i>Ann Arbor.</i>
Edith Emeline Swinton,	Ph.B.	64	<i>Calumet.</i>
Parthenia Sykes,	A.B.	96	<i>Ann Arbor.</i>
James Shirley Symons,	A.B.	47	<i>Saginaw.</i>
Mary Louise Symons,			<i>Saginaw.</i>
Maude Faith Tabor,	Ph.B.	94	<i>Lavton.</i>
James Moses Taggart,	Ph.B.	59	<i>Grand Rapids.</i>
Harry Harvey Talcott,	A.B.	62	<i>Des Plaines, Ill.</i>
William Wilson Talcott,	A.B.	60	<i>Chicago, Ill.</i>
Thomas Arthur Taper,	B.S.	93	<i>Lake Linden.</i>
Arthur Ostrander Taylor,	A.B.	68	<i>Ann Arbor.</i>
Carrie Louise Taylor,	Ph.B.	56	<i>Harbor Beach.</i>
John Backus Taylor,	B.S.	86	<i>Wheelersburg, O.</i>
Katharine Taylor,	B.L.	56	<i>Ionia.</i>
Pearl Blanche Taylor,	Ph.B.		<i>Tacoma, Wash.</i>
Thomas Chalmers Taylor, Jr.,			<i>Almont.</i>
Leslie Joseph Tefft,	Ph.B.	60	<i>Elgin, Ill.</i>
John Henry TerAvest, A.B., <i>Hope College,</i>	A.B.	90	<i>Zeeland.</i>
Earle Melvin Terry,	A.B.	32	<i>Battle Creek.</i>
Ida Margaret Thain,	B.L.	83	<i>Oak Park, Ill.</i>
Belle Robinson Thayer,			<i>Chilton, Wis.</i>
†Earl Dennison Thomas, Jr.,			<i>Ludington.</i>
Charles Fullinton Thompson,	B.S.		<i>Jamestown, N. Dak.</i>
Clarence Fred Thompson,			<i>Romeo.</i>
Edgar Campbell Thompson,	A.B.	62	<i>Detroit.</i>
Edward Avery Thompson,	Ph.B.	87	<i>Belvidere, Ill.</i>
John Edmund Thompson,	Ph.B.	60	<i>Mount Clemens.</i>
Hattie Waterbury Thomson,	B.S.		<i>Port Sanilac.</i>
Alice Margaret Thorne,	B.L.	106	<i>Toledo, O.</i>
Frederic Will Thurnau,	Ph.B.	32	<i>Chicago, Ill.</i>
Alice Emeline Thurston	A.B.	63	<i>Rockford, Ill.</i>
Grace Augusta Todd,	B.L.	24	<i>Jackson.</i>
Sarah Edith Todd,	B.L.		<i>Jeddo.</i>
Edith Edna Todt,	B.L.	33	<i>Detroit.</i>
Eleanor Worthington Towar,			<i>Ann Arbor.</i>
Katharine Mary Tower,	A.B.		<i>Detroit.</i>
Ethel Lola Traphagen,	Ph.B.		<i>Fenton.</i>
Mabel Trask,	B.L.	70	<i>Ann Arbor.</i>

George Nelson Tremper,	A.B.	59	<i>Pontiac.</i>
Frances Ethel Tripp,	B.L.	90	<i>Commerce.</i>
Myron Owen Tripp, B.S.,			
<i>Northern Indiana Normal School,</i>			<i>Bass River.</i>
Oscar Stuart Trumble,	A.B.	30	<i>Davison.</i>
Claude Thorne Tuck,	B.L.	30	<i>Belding.</i>
James Turner,	B.S.	32	<i>Lansing.</i>
Leigh Martin Turner,	A.B.	93	<i>Battle Creek.</i>
Scott Turner,	B.S.	30	<i>Lansing.</i>
Bertha Adams Tuttle,	A.B.		<i>Battle Creek.</i>
Marguerite Griffith Tyler,	B.S.		<i>Detroit.</i>
George Uihlein,	Ph.B.	6	<i>Milwaukee, Wis.</i>
Leslie Ullrich,	Ph.B.	27	<i>Mount Clemens.</i>
Jerome Adams Utley,	A.B.		<i>Detroit.</i>
Stuart Wells Utley,	Ph.B.	32	<i>Detroit.</i>
Jessie Naomi Vail,	Ph.B.		<i>Michigan City, Ind.</i>
Edson Blaine Valentine,	Ph.B.	63	<i>Benton Harbor.</i>
Ralph Houston Van Cleve,	Ph.B.	55	<i>Marinette, Wis.</i>
Rena Rae Van Fossen,			<i>Paw Paw.</i>
Charles VanKeuren,	A.B.	45	<i>Howell.</i>
Herbert Van Leach,	B.L.	56	<i>Ann Arbor.</i>
Edith Charlotte Van Slyke,	Ph.B.	4	<i>Des Moines, Ia.</i>
Frank Van Vliet,	A.B.	28	<i>Grand Rapids.</i>
Ray Van Winkle,	B.L.		<i>Hartford City, Ind.</i>
John Walter Vaughan,	A.B.	28	<i>Ann Arbor.</i>
Victor Clarence Vaughan, Jr.,	A.B.	94	<i>Ann Arbor.</i>
Leonard John Vaupell,	Ph.B.		<i>Grand Haven.</i>
William Henry Veenboer,	B.S.	62	<i>Grand Rapids.</i>
Ada Maude Vickers,	Ph.B.	90	<i>Paola, Kan.</i>
Sylvia Sanders Videtto,	Ph.B.	113	<i>Ann Arbor.</i>
Oscar William Voedisch,	B.L.	59	<i>Chicago, Ill.</i>
August Lipkue Volkers,			<i>Freeport, Ill.</i>
Lucia Isabelle Voorhees,			<i>Wyoming, Ill.</i>
Joseph Vernor Voorheis,	A.B.		<i>Detroit.</i>
Bess May Vrooman,	A.B.	4	<i>Dowagiac.</i>
Evelyn C. Vyn,	A.B.	93	<i>Grand Rapids.</i>
Elsie Mae Wagner,	A.B.		<i>Marshall.</i>
Frank Allan Wagner,			<i>Ann Arbor.</i>
Charles Christian Walker,			<i>Cleveland, O.</i>
Charlotte Hall Walker,	A.B.	99	<i>Ann Arbor.</i>
Florence Walker,	Ph.B.	96	<i>Des Moines, Ia.</i>
Lillian Vivian Wallace,	Ph.B.	62	<i>Memphis, Tenn.</i>
May Frances Walsh,	B.S.	2	<i>Ann Arbor.</i>

Thomas Fleming Walsh,	A.B.	32	<i>Port Huron.</i>
Beulah Claire Walters,			<i>Shawnee, Okla.</i>
Max Walther,	Ph.B.	96	<i>Saginaw.</i>
William Frederick Ward,			<i>Parawan, Utah.</i>
Lyford Wilson Warfield,	B.L.	92	<i>Des Moines, Ia.</i>
Eloise Waring,	A.B.	64	<i>Tecumseh.</i>
Selah Brown Warren,	B.S.	88	<i>Detroit.</i>
Carlton Wood Washburn,	B.S.		<i>Belding.</i>
Harry Booth Washburn,	A.B.		<i>Ann Arbor.</i>
Homer Charles Washburn,	B.L.		<i>Freeport.</i>
Mattie Louisa Waterman,	Ph.B.	31	<i>Alpine.</i>
Dwight Everett Watkins,	Ph.B.	51	<i>Ann Arbor.</i>
Helen Mary Wattles,	A.B.	56	<i>Birmingham.</i>
Marcia Webb,	Ph.B.	4	<i>Mackinaw Island.</i>
Helen Carolyn Wedd,			<i>Mortimer, N. Y.</i>
Leo Weiss,	B.L.	96	<i>Detroit.</i>
Sophie Wilhelmine Welch,			<i>Ann Arbor.</i>
Maud Apollona Wellman,	Ph.B.	100	<i>Port Huron.</i>
Agnes Ermina Wells,	A.B.		<i>Saginaw.</i>
Cora Edna Wells,	B.S.		<i>Morris, Minn.</i>
Welcome L. Wells,	B.S.	84	<i>Manistee.</i>
Melville Samuel Welt,	A.B.	40	<i>Detroit.</i>
Harry Augustus Weston,	A.B.	70	<i>Victor, Ia.</i>
Florence Katheryn Wetmore,	A.B.	93	<i>Ann Arbor.</i>
Edith Adelaide Wheeler,	B.L.	49	<i>Detroit.</i>
May Wheeler,	B.S.	68	<i>Indianapolis, Ind.</i>
Harry Probasco Wherry,	B.L.		<i>Cincinnati, O.</i>
Mary Maud Whipple,			<i>Detroit.</i>
Winfred Foster Whitcomb,	A.B.	85	<i>Englewood, Ill.</i>
Florence Adeline White,	Ph.B.		<i>Moline, Ill.</i>
Milo Armstrong White,	B.S.	32	<i>Frenont.</i>
Bayard Josselyn Whitman,	A.B.		<i>Ann Arbor.</i>
Mary Mae Whitmer,			<i>South Bend, Ind.</i>
John Walter Whitson,	B.L.		<i>Manhattan, Ill.</i>
Mary Elizabeth Widdecombe,			<i>Kent, O.</i>
Iouis Christian Wieland,	Ph.B.	28	<i>Duluth, Minn.</i>
Jacob Howard Merton Wiest,	A.B.	44	<i>Pontiac.</i>
Alice Emily Wilcox,			<i>Battle Creek.</i>
Jennie Belle Wilcox,	Ph.B.	50	<i>Manistee.</i>
Hobart Hurd Willard,	Ph.B.	11	<i>Union City.</i>
Ethel May Williams,	Ph.B.	93	<i>Grand Rapids.</i>
Ethel May Williams,	B.L.	28	<i>Ironwood.</i>
Frieda Katherine Williams,	Ph.B.		<i>Peoria, Ill.</i>

Harrison Gaylord Williams,	A.B.	52	<i>Lapeer.</i>
Verna Eugenia Williams,	B.L.		<i>Williamston.</i>
William Kirkwood Williams,	A.B.	48	<i>Lapeer.</i>
John Carter Williamson,	Ph.B.		<i>Detroit.</i>
Robert Dawson Williamson,	B.L.	14	<i>Ann Arbor.</i>
Henry Wyatt Willis,	A.B.	30	<i>Buffalo, N. Y.</i>
Levi Philip Ray Willoughby,	A.B.	104	<i>Detroit.</i>
Henry Wineman,	Ph.B.	56	<i>Detroit.</i>
Mabel Gundrum Wing,	A.B.	66	<i>Ionia.</i>
John Arthur Winter,	B.S.	32	<i>Negaunee.</i>
Emily Porter Wolcott,	B.S.	60	<i>Tallmadge, O.</i>
Andrew Holister Wood,	Ph.B.	85	<i>Ann Arbor.</i>
Junius Boyd Wood,	Ph.B.	90	<i>Elgin, Ill.</i>
Mabel Louise Wood,	B.L.	58	<i>Ann Arbor.</i>
Mary Margaret Wood,	A.B.		<i>Decatur, Ill.</i>
John Walter Woodhams,	A.B.	32	<i>Caro.</i>
Bertha May Woodin,	B.S.	87	<i>Ann Arbor.</i>
Helen Sill Woodrow,	Ph.B.		<i>Ann Arbor.</i>
Esther Woodruff,	A.B.	27	<i>Saginaw.</i>
Mildred Layton Woodruff,	Ph.B.	15	<i>Buffalo, N. Y.</i>
Fred Leroy Woods,	B.L.	49	<i>Brownsville.</i>
Jennie Morgan Woods,	A.B.	95	<i>Ann Arbor.</i>
Guilford Worth Woodworth,	B.L.	21	<i>Java, N. Y.</i>
Roy Church Woodworth,	B.L.	96	<i>Kansas City, Mo.</i>
William Hoyt Worrell,	A.B.		<i>Toledo, O.</i>
Bernice Worth,			<i>Benton Harbor.</i>
Lynne Worth,			<i>Benton Harbor.</i>
Fred Alonzo Wyckoff,	A.B.		<i>Detroit.</i>
Elizabeth Wylie,	Ph.B.	89	<i>Saginaw.</i>
Rutherford Merrill Yokom,			<i>Ridgeway.</i>
Elizabeth Young,	B.L.	95	<i>Detroit.</i>
Fannie Louise Young,	B.S.	49	<i>Vicksburg.</i>
Karl Hinman Young,	A.B.	65	<i>Ypsilanti.</i>
Lafayette Young, Jr.,	Ph.B.	91	<i>Des Moines, Ia.</i>
Orville Stanley Young,	B.L.		<i>Niles.</i>
Jesse Lansing Yount,			<i>Anamosa, Ia.</i>
Daniel Forbes Zimmerman,	B.S.	37	<i>Ann Arbor.</i>
Theo John Zimmerman,	A.B.	56	<i>Three Oaks.</i>
Karl Wilhelmj Zimmerschied,	B.L.	37	<i>Kansas City, Mo.</i>
Harold Earl Zook,	B.S.	59	<i>Nappanee, Ind.</i>
*Wilbur Pardon Bowen,	B.S.	104	<i>Ypsilanti.</i>

* Omitted from place in alphabetical order.

Department of Engineering.

FACULTY.

JAMES B. ANGELL, LL.D., *President.*

ALBERT B. PRESCOTT, M.D., LL.D.

- CHARLES E. GREENE, A.M., C.E., *Dean.*

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EDWARD D. CAMPBELL, B.S.

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GEORGE W. PATTERSON, Jr., Ph.D.

JOHN O. REED, Ph.D.

PAUL R. DE PONT, A.B., B.S., *Registrar*

JOSEPH L. MARKLEY, Ph.D.

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KARL E. GUTHE, Ph.D.

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JAMES W. GLOVER, Ph.D.

EDWIN C. GODDARD, Ph.B., LL.B.

- HERBERT J. GOULDING, B.S.

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AUGUSTUS TROWBRIDGE, Ph.D.

WILLIAM H. BUTTS, A.M.

- SHIRLEY W. SMITH, B.L.

- GEORGE L. GRIMES, B.S.

CHRISTIAN F. GAUSS, A.M.
 EUGENE C. SULLIVAN, Ph.D.
 - HENRY C. ANDERSON, M.E
 JOHN DIETERLE, A.B.
 ALICE L. HUNT.

Other Instructors and Assistants.

- FREDERICK J. WILBUR.
 - ALFRED E. LINDAU.
 NORMAN F. HARRIMAN.

STUDENTS

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Fred May Green, B.S.[M.E.], 1898,	<i>Charlevoix.</i>
Percy Albert Himes, B.L., 1899,	<i>Grand Rapids.</i>
Ard Ezra Richardson, B.S.[E.E.], 1899,	<i>Saginaw.</i>
Francis Joseph Seabolt, B.S.[M.E.], 1897,	<i>Ann Arbor.</i>

CANDIDATES FOR AN ADVANCED DEGREE, STUDYING IN ABSENTIA.

NAME.	RESIDENCE.
Mortimer Grant Barnes, B.S.[C.E.], 1896,	<i>Sterling, Ill.</i>
Murray Blanchard, B.S.[C.E.], 1898,	<i>Port Huron.</i>
Ralph Eells Newton, B.S., 1898,	<i>Milwaukee, Wis.</i>

UNDERGRADUATES.*

NAME.	COURSE.	CREDIT.	RESIDENCE.
Henry Howard Alger,			<i>Holly.</i>
William Henry Allen, Jr.,			<i>Grosse Ile.</i>
George Henry Anderson,			<i>Battle Creek.</i>
Leslie Douglass Anderson,	M.	78	<i>Ishpeming.</i>
Harry Andrews,			<i>Jefferson, O.</i>
Emilio Arizpe,	M.	74	<i>Saltillo, Mexico.</i>

*The letters in the column headed **COURSE** indicate the line of work the student has chosen to pursue: C denoting civil engineering; M, mechanical engineering; E, electrical engineering. As students are not asked to make choice of course until the beginning of their second year, the absence of a letter indicates that the student is in his first year, or, in a few cases, that he is taking miscellaneous studies without being registered as a candidate for any degree. The figures in the column headed **CREDIT** indicate the number of hours of work taken by candidates for degrees prior to the beginning of the current academic year, 1899-1900, and completed without conditions, or credited to them on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester. Compare page 149.

Aikman Armstrong,	M.	69	<i>Detroit.</i>
Samuel Elsworth Atkins,			<i>Escanaba.</i>
Harry Hurd Atwell,			<i>Perryburg, N. Y.</i>
Bert Wise Bachtel,			<i>Flint.</i>
Wareham Strong Baldwin	M	73	<i>Detroit.</i>
Max Hayden Barber,			<i>Ishpeming.</i>
Arthur Merritt Barrett,	C.	42	<i>Chicago, Ill.</i>
Harry Ira Bates,			<i>Detroit.</i>
Edward Duncan Beals,			<i>Sioux City, Ia.</i>
Mark Brewer Beattie,	E.	77	<i>Ann Arbor.</i>
Albert John Becker,			<i>Evansville, Ind.</i>
Elias Hyrum Beckstrand,	E.	87	<i>Meadow, Utah.</i>
Edward Lewis Benedict,	M.	70	<i>Birmingham.</i>
Arthur Hart Bennett,	C.	41	<i>Detroit.</i>
Claude Kingsley Bentley,	M.	91	<i>Owosso.</i>
Homer Webb Benton,			<i>Dexter.</i>
Frederic Adrian Bergbom,	M.	105	<i>Chicago, Ill.</i>
Henry Wood Berger,			<i>Jackson.</i>
Willis Fredrick Bickel,		7	<i>McGregor, Ia.</i>
Austin Perry Biggs,	M.	68	<i>Ann Arbor.</i>
August Emanuel Bjork,	C.	55	<i>Chicago, Ill.</i>
Frank Kinney Boggs,			<i>Cheboygan.</i>
Stanislaus Evan Bounavicz,	C.	32	<i>Coldwater.</i>
James Frederick Bourquin,	M.	45	<i>Detroit.</i>
William Herbert Boyer,			<i>Chicago, Ill.</i>
Frederick Norman Bradley,	M.	94	<i>Joliet, Ill.</i>
Homer Britton,		40	<i>Friendship, N. Y.</i>
Chason Winslow Brooks,	C.	37	<i>Chicago, Ill.</i>
Fred Walter Brown,			<i>Flint.</i>
John Arthur Bryant,	M.	27	<i>Detroit.</i>
Joseph Wallace Busch,	E.	100	<i>Marquette.</i>
Hubert Ward Carpenter,	M.	71	<i>Orion.</i>
Thomas Henry Carver,			<i>Valparaiso, Ind.</i>
William Ninde Chaffee,	E.	31	<i>Detroit.</i>
Martin Tuttle Chamberlain,			<i>Muskegon.</i>
Washington Hobert Chapman,	M.	104	<i>Ypsilanti.</i>
Markham Cheever,	M.	39	<i>Ann Arbor.</i>
Paul Cheever,	M.	96	<i>Ann Arbor.</i>
Charles Porter Chester,		20	<i>Chicago, Ill.</i>
John Stephen Chisholm,			<i>Grand Marais.</i>
William Hill Clapsaddle,		6	<i>Davison.</i>
Arthur Pierson Clark,		29	<i>Dearborn.</i>
Clarence Howard Clark,	M.	74	<i>Saginaw.</i>

Carlos Carleton Cleverdon,	M.	91	<i>Austin, Ill.</i>
Harry Lansing Clute,			<i>Marshall.</i>
Howard Earle Coffin,	E.	49	<i>Ann Arbor.</i>
Charles Vaughn Conover,	M.	28	<i>Flint.</i>
Frederick William Cram,		6	<i>Escanaba.</i>
Frederick William Cummer,	M.	26	<i>Cadillac.</i>
Harry Alfred Dalby,		6	<i>Mount Clemens.</i>
James Vernon Davidson,			<i>Grand Rapids.</i>
Jenaro Davila,	C.	91	<i>Monterey, Mex.</i>
Charles Baker Davis,	C.	63	<i>Ann Arbor.</i>
Albert Clifford DeLong,			<i>Bradley, Ill.</i>
Ward Arnold Detwiler,	M.	25	<i>Owosso.</i>
Richard DeYoung,		21	<i>Chicago, Ill.</i>
Claude Rogers Dickey,	E.	63	<i>Albion.</i>
John Leo Dickey,	C.	36	<i>Niles.</i>
Harry Hammond Dickinson,	E.	95	<i>Nashville.</i>
Willard J. Dolph,			<i>Northville.</i>
Paul Andrew Dratz,	E.	102	<i>Muskegon.</i>
Gustav Bernhard Eggert,	M.	82	<i>Saginaw.</i>
John Orne Emerson,	M.	71	<i>Jackson.</i>
Emmet Emons Ewers,			<i>Morrison, Col.</i>
Lewis Edward Fagan, B.S.,			
<i>Lenox College,</i>		20	<i>Onslow, Ia.</i>
Philip Henry Falter,	C.	127	<i>Sault Ste. Marie.</i>
Fay Leone Faurote,		6	<i>Niles.</i>
Sidney Morris Fechheimer,		6	<i>Detroit.</i>
Neal Charles Fenkell,			<i>Chagrin Falls, O.</i>
Donard McHardy Ferguson,	C.	17	<i>Almont.</i>
Harold Richards Finney,	M.	26	<i>Detroit.</i>
David Gerould Fisher,	C.	100	<i>Kalamazoo.</i>
Albert Chamberlain Fitch,		12	<i>Detroit.</i>
Lucian Day Fite,			<i>Georgetown, O.</i>
Ernest Edward Fitzpatrick,			<i>Au Sable.</i>
Hubert Sterling Frazier,		28	<i>Otsego.</i>
John William Fyan,		6	<i>Port Huron.</i>
Robert Bellows Gage,			<i>Troy, O.</i>
Charles Cassius Gates,			<i>Detroit.</i>
Kent Vail Gay,			<i>Denison, Tex.</i>
George Woodbury Gilkey,		6	<i>Plainwell.</i>
Ralph Dickinson Goodrich,		16	<i>Ypsilanti.</i>
Andrew Grabenstein,	C.	95	<i>Lake Linden.</i>
William Richard Grace,			<i>Oswego, N. Y.</i>
Lewis Merritt Gram,	C.	75	<i>Menominee.</i>

George Grant, Jr.,		6	<i>Saginaw.</i>
Joseph Hughart Griswold,		6	<i>Grand Rapids.</i>
Albert Guthman,		20	<i>Chicago, Ill.</i>
Robert Morrison Hall,		41	<i>Three Rivers.</i>
William Lloyd Hamilton,			<i>Bangor.</i>
Guido John Hansen,			<i>Milwaukee, Wis.</i>
George Henry Harris,			<i>South Rockwood.</i>
Jay Butler Harris,		6	<i>Ann Arbor.</i>
Russell Edwin Harrison,		6	<i>Ypsilanti.</i>
Harry D. Harting,	C.	97	<i>Grand Rapids.</i>
Charles Corum Haslam,		1	<i>Ishpeming.</i>
James Edward Haurahan,		6	<i>Buffalo, N. Y.</i>
Leonard Hawkins,		6	<i>Elgin, Ill.</i>
Muller Stuntz Hay,			<i>Erie, Pa.</i>
Guy Potter Henry,	M.	71	<i>Ann Arbor.</i>
George Samuel Hill,	C.	83	<i>Hillsdale.</i>
Harvey Wellman Hincks,		6	<i>Manistee.</i>
Dana Harrison Hinkley,			<i>Benton Harbor.</i>
Stephen A. Hoag,			<i>Ionia.</i>
Alpheus Elton Holcomb,	M.	75	<i>Fenton.</i>
Arthur Holmes,			<i>Ypsilanti.</i>
Fred Merriam Hopkins,	M.	32	<i>Romeo.</i>
William Christian Hornberger,	M.	71	<i>Lansing.</i>
Raymond Fuller Horton,	C.	67	<i>Detroit.</i>
William O. Houston,		6	<i>Ann Arbor.</i>
Charles Willard Howard,		6	<i>Lansing.</i>
Howard Benson Howie,			<i>Sault Ste. Marie.</i>
Hayward Noye Hoyt,			<i>Grand Rapids.</i>
George Deming Hudnutt,	M.	95	<i>Big Rapids.</i>
Harry Crocker Hutchins,			<i>Ann Arbor.</i>
Henry Imhof,	M.	75	<i>Chicago, Ill.</i>
Roscoe Bradbury Jackson,	M.	38	<i>Ionia.</i>
Ernest Hiram Jacobs,	E.	109	<i>Owosso.</i>
Amasa Rust Jaquith,			<i>Detroit.</i>
Jarvis Slade Jennings, Jr.,		6	<i>Detroit.</i>
Cortes Johnson,		2	<i>La Grange, Mo.</i>
Lee Farrar Johnston, B.S.,			
<i>Purdue University,</i>	C.		<i>Detroit.</i>
Oscar Graham Joseph,	C.	107	<i>Louisville, Ky.</i>
Howard B. Keeney,		6	<i>Flint.</i>
Edgar Weber Kiefer,	M.	72	<i>Detroit.</i>
John Wilhelm Kiehle,		3	<i>Dansville, N. Y.</i>
Howard Malcolm Kilpatrick,		15	<i>White Plains, Ga.</i>

Edmund Peaslee Kinne,	M.	77	<i>Ypsilanti.</i>
William Wick Kittleman, Jr.,	E.	52	<i>Detroit.</i>
Alfred Henderson Knight,	M.	97	<i>Flint.</i>
Earle Kelly Knight,		6	<i>Albion.</i>
Stuart Kelsey Knox,			<i>Ann Arbor.</i>
Otto Adolph Krause,	M.	102	<i>Grand Rapids.</i>
Robert Ebenezer Kremers, A.B., <i>Hope College,</i>	C.	106	<i>Holland.</i>
Walter Archibald Kysor,			<i>Point Marion, Pa.</i>
John Thomas Ladue,	C.	57	<i>Detroit.</i>
William Arthur Lafler,			<i>Albion, N. Y.</i>
Forest Henry Lancashire,	M.	49	<i>Detroit.</i>
Robert E. Lee,	C.	35	<i>Ann Arbor.</i>
Charles Gillett Leeson,	M.	71	<i>Manchester.</i>
Willy Lehnartz,	M.	132	<i>Grand Rapids.</i>
Ora Miner Leland,	C.	110	<i>Grand Haven.</i>
Frank Hamilton Lewis,		3	<i>Flint.</i>
Harlow Lewis,	C.	34	<i>Dubuque, Ia.</i>
Ralph Garfield Lewis,	M.	64	<i>Ann Arbor.</i>
John Elmer Linabury,	M.	42	<i>Pontiac.</i>
Alfred Emanuel Lindau,	M.	104	<i>Chicago, Ill.</i>
Bernard Haack Liskow,	M.	72	<i>Saginaw, West Side.</i>
Claude Lyman Lockwood,	M.	19	<i>Grand Rapids.</i>
Chester Brown Loomis,	M.	110	<i>Ypsilanti.</i>
Frank Irwin Louckes,	C.	39	<i>Ann Arbor.</i>
Frederic Hale Loud,	C.	89	<i>Au Sable.</i>
George Brewster Loud,			<i>Au Sable.</i>
Peter Martin Louwerse,	C.	34	<i>Grand Rapids.</i>
John Paul Lucas,			<i>North Cucamonga, Cal.</i>
Guy Webster Lunn,	E.	106	<i>Greenville.</i>
Thomas Edward Lynch,			<i>Wiscoy, Minn.</i>
Thomas Lee Brent Lyster,	M.	74	<i>Detroit.</i>
Jehu Elliott McAfee,		9	<i>Kenilworth, Ill.</i>
Roylance Russell McCloy,	C.	34	<i>Bay City.</i>
Andrew Horace McDougall,	M.	70	<i>Ypsilanti.</i>
Henry Archibald McLean,	M.	103	<i>Cass City.</i>
Ralph William McMullen,			<i>Grand Rapids.</i>
Merritt Charles McNeil,			<i>El Dorado Springs,</i>
John Royal Mansfield,	M.	26	<i>Bay City.</i> [Mo.]
Royal John Mansfield,	C.	97	<i>Bay City.</i>
Harry Stone Marsh,	E.	97	<i>Detroit.</i>
Percy William Martin,	M.	30	<i>Bay City.</i>
Walter Ballard Maurice,	C.	99	<i>Detroit.</i>

William Burgess May,		10	<i>Bellaire.</i>
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Robert Hall Merrill,	C.	34	<i>Grand Rapids.</i>
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Frederick Clarence Purcell,		6	<i>Chicago, Ill.</i>
Fred Moritz Rademacher,	C.	53	<i>Saginaw.</i>
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William Henry Radford,		6	<i>Detroit.</i>
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Harry Mix Sedgwick,	M.	96	<i>Chicago, Ill.</i>

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Edward Sharpe Snover,		8	<i>Port Austin.</i>
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William Henry Spire,	E.	66	<i>Ceylon.</i>
Christopher Steele Spofford,	C.	36	<i>Coldwater.</i>
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William Cornelius Swartout,	C.	57	<i>Linden.</i>
Charles Roscoe Swineford,			<i>Marshall.</i>
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Albert Douglas Foster, M.D.,	<i>Detroit.</i>
Edward Reed Wagner, A.M., M.D.,	<i>Ann Arbor.</i>

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 Arthur Robert Adams,
 Helen Emelia Affeld,
 Harriet Virginia Baker,

Carl Hardin Ballard,	<i>Huron, S. Dak.</i>
Thomas Charles Barnhart,	<i>Estherville, Ia.</i>
Edgar Bates, B.S.,	<i>Bear Lake.</i>
Emil Frederick Baur,	<i>Manistee.</i>
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Andrew Jackson Detweiler, A.B., <i>University of</i>	
<i>the State of Missouri,</i>	<i>Washington, Mo.</i>
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Burt Francis Green, A.B., <i>Hillsdale College,</i>	<i>Hillsdale.</i>
David S. Grim, A.B., <i>Bucknell University,</i>	<i>Kutztown, Pa.</i>
George Tryon Harding, Jr.,	<i>Marion, O.</i>
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James Henry, Jr.,	<i>Grand Rapids.</i>
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Sue Emma Hertz, M.D., <i>New York Medical</i>	
<i>College and Hospital for Women,</i>	<i>New York, N. Y.</i>
Wiley DeBarr Hickey,	<i>Leipsic, O.</i>
Martin Luther Hindley,	<i>Norwalk, O.</i>
Theodore Augustus Hoch,	<i>Michigan City, Ind.</i>

Frank Holdsworth,	<i>Traverse City.</i>
Maria Kirby Hopkins,	<i>Castile, N. Y.</i>
Fritz Carleton Hyde, B.S.,	<i>Grand Rapids.</i>
Susan Baxter Jarrett,	<i>Quincy, Ill.</i>
Kate McClure Johnson, Ph.B., <i>University of</i>	
<i>Wooster,</i>	<i>Wooster, O.</i>
Ralph Kenney Johnson,	<i>Ludington.</i>
John Franklin Jordan,	<i>Haverhill, Mass.</i>
Christ William Kanne,	<i>Waterville, Minn.</i>
Minta Proctor Kemp,	<i>Sault Ste. Marie.</i>
Carl Sears Kennedy, B.S.,	<i>Rockford, Ill.</i>
Aaron Floyd Kingsley,	<i>Leonidas.</i>
William Jordan Lakey,	<i>Chicago, Ill.</i>
Eva May Locke, A.B.,	<i>Nashua, N. H.</i>
John Alva Longmore, Ph.B., <i>Hiram College,</i>	<i>Warren, O.</i>
Carl Hayes Lund, A.B., <i>Marietta College,</i>	<i>Marietta, O.</i>
James Leo Lynch,	<i>Wisconsin, Minn.</i>
Harry McNeal, B.L.,	<i>Alvordton, O.</i>
Reynolds Cornelius Mahaney,	<i>Ann Arbor.</i>
Jay Elmer Mallette,	<i>Grand Rapids.</i>
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Ernest Laftit Martin,	<i>Saginaw.</i>
James Acker Mattison, A.B., <i>Univ. of Nashville,</i>	<i>McCormick, S. C.</i>
John Arthur Miller, A.B., <i>Williams College,</i>	<i>Portsmouth, Va.</i>
Charles Madison Mooney,	<i>Wheelerburg, O.</i>
John Harris Forster Mullett, B.S., <i>Mich. Agr. Coll.,</i>	<i>Ann Arbor.</i>
<i>M.D.C., Chicago Veterinary College,</i>	<i>Dowagiac.</i>
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Frank Wesley Nagler, B.S.,	<i>Ann Arbor.</i>
Andrew Nelson,	<i>Detroit.</i>
William Wilmon Newcomb, B.S.,	<i>Detroit.</i>
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Albert Rowland, Ph.C., <i>Ada University,</i>	<i>Constantine.</i>
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John Stoddard,	<i>Chateaugay, N. Y.</i>
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Walfred Archimedes von Zellen,	Skaneec.
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Edward George Weadock,	Lima, O.
Freeman E. Wilson,	Marlette.

THIRD YEAR STUDENTS.

NAME.	RESIDENCE.
Frank Paul Anzinger, A.B., <i>Wittenberg College</i> ,	Springfield, O.
Patience Bourdeau Archer,	Battle Creek.
Ulysses Grant Auer, B.S., <i>Northern Indiana</i> <i>Normal School</i> ,	Grafton, Ill.
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George Bowman,	Irwin, Pa.
Earle Mason Brown, B.S.,	Battle Creek.
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William Sabin Chase, A.B., <i>Princeton Univ.</i> ,	Akron, O.
Guy Clifton Conkle,	Bucyrus, O.
James Harry Cox,	Calumet.
James George Cumming,	Oil City, Pa.
Elvia Clair Derickson,	Battle Creek.
Frank C. Diver,	Kalamazoo.
Harold Medoris Doolittle,	Painesville, O.
Charles Wallace Edmunds,	Richmond, Ind.
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Gertrude Felker, A.B., <i>Rockford College</i> ,	Madison, Wis.
Lela Nell Swarthout French,	Coldwater.
Nathaniel Hall Fuller,	Hastings.
Roy Henry Garm,	Beardstown, Ill.
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James Hampton Hays,	Ogden Centre.

Bernhard Alfred Hoermann, A.B., <i>Northwestern University (Wis.)</i> ,	<i>Watertown, Wis.</i>
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Maria Wolz Breid,	<i>Trenton, Mo.</i>
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Carl Meridith Erb,	<i>Bear Lake.</i>
William Albert Evans,	<i>Ann Arbor.</i>
George Wesley Evarts,	<i>Big Rapids.</i>
Burdette Scrage Frary,	<i>Ypsilanti.</i>
Clark Butern Fulkerson,	<i>Three Rivers.</i>
Albert Julius Geiger,	<i>Woodland.</i>
Frank James Gibson,	<i>Ann Arbor.</i>
John Henry Gilpin,	<i>Chapoygan.</i>
Arthur Emery Green,	<i>Ann Arbor.</i>
Raymond Stephen Halligan,	<i>Albion, Neb.</i>
Isabelle Harter,	<i>Brooklyn, N. Y.</i>
John Goold Harvey,	<i>Detroit.</i>
Sidney Zell Herbert,	<i>Evansville, Ind.</i>
John Bennett Herff,	<i>Saint Louis, Mo.</i>
Henry Albert Herzer, Ph.C.,	<i>Ann Arbor.</i>
Harry Hiram Hewitt,	<i>Ellendale, N. Dak.</i>
Albert Edward Hillis,	<i>Bathgate, N. Dak.</i>
Ernest Bryant Hoag, B.S., <i>Northwestern Univ.,</i>	
A.B., <i>Leland Stanford Jr. University,</i>	<i>Madison, Wis.</i>
Walter Sanford Holmquist,	<i>Salina, Kan.</i>
Leonard Counsellor Honesty, A.B.,	<i>Memphis, Tenn.</i>
Anthony Wilber Hoon,	<i>Mercer, Pa.</i>
Glenn Atherton Howard,	<i>Columbus, Wis.</i>
Edward Vernard Howlett,	<i>Gregory.</i>
Jane Hughes,	<i>Blue Earth City, Minn.</i>
Perry Robert Hungerford,	<i>Albion.</i>
DeWitt Clinton Huntoon, B.L., B.S.,	<i>Waterford.</i>
Cecil McKee Jack, Ph.B.,	<i>Decatur, Ill.</i>
Curtiss Norton Jameson, B.S., <i>University of</i>	
<i>Rochester,</i>	<i>Rochester, N. Y.</i>
Sarkis P. Jamgatchian, Ph.B., <i>Taylor Univ.,</i>	<i>Alexandria, Egypt.</i>

Hans Martin Johnson,	<i>Ann Arbor.</i>
Harry Arthur Johnson,	<i>Ishpeming.</i>
Thomas Victor Keene,	<i>Evansville, Ind.</i>
Neal Kellogg,	<i>Strickland.</i>
Roderick Duncan Kennedy,	<i>Cheboygan.</i>
Frank Alsworth King,	<i>Benton Harbor.</i>
Oscar Kirchgessner,	<i>Manchester.</i>
Patrick Lahey,	<i>Sault Ste. Marie</i>
George Burt Lake,	<i>Ann Arbor.</i>
Theron Sparhawk Langford,	<i>Williamston.</i>
George William Lawton,	<i>New York, N. Y.</i>
Harold James Levis,	<i>Rochester, N. Y.</i>
George Gunn Lindsay,	<i>Scranton, Pa.</i>
Francis William Lockwood,	<i>Port Jervis, N. Y.</i>
William Otis McBride,	<i>Denver, Col.</i>
Norman Lincoln McDiarmid, A.B., <i>Bethany</i>	
<i>College,</i>	<i>Hiram, O.</i>
Harry Stowe McGee,	<i>Jackson.</i>
William E. McNamara,	<i>Howell.</i>
Russel Ross Marble, B.S., <i>Mich. Agr. Coll.,</i>	<i>Webberville.</i>
Thomas Philip Martin,	<i>Olivet.</i>
Ralph Luther Morse,	<i>Ann Arbor.</i>
Remus Cook Morris,	<i>Ann Arbor.</i>
Harry Kavanaugh Morrison,	<i>Louisville, Ky.</i>
Frederick Henry Newberry,	<i>Petoskey.</i>
Otis Elliot Newsome,	<i>Williamsville.</i>
Charles Frederick Nieder,	<i>Phelps, N. Y.</i>
Norman Beard Noll,	<i>Mercer, Pa.</i>
Lydia Marian O'Harrow,	<i>Union Springs, N. Y.</i>
Donald Platt Osborne,	<i>Niles.</i>
Thomas Woodburn Paton,	<i>Leslie.</i>
Charles Lanphier Patton,	<i>Springfield, Ill.</i>
John Groh Philips,	<i>Lickdale, Pa.</i>
Eugene Bennett Pierce, A.B., <i>Williams College,</i>	<i>Putney, Vt.</i>
Charles John Piquette, B.S., <i>Notre Dame Uni-</i>	
<i>versity,</i>	<i>Detroit.</i>
Velura Elma Powell,	<i>Glenwood, Ia.</i>
Richard Van Deren Pride,	<i>Saint Joseph.</i>
Kate Jane Rayl,	<i>McGuffey, O.</i>
Alta Edna Rice,	<i>Niles.</i>
Nelson John Robbins,	<i>Ishpeming.</i>
Clifford Clarence Robinson,	<i>Dowagiac.</i>
Fred George Ronneburger,	<i>Milwaukee, Wis.</i>

Hubert Davison Russell,
 Frederick William Sauer, Ph.G., *Northern
 Indiana School of Pharmacy*,
 Harry Arthur Schirrmann,
 Edward Washington Scowden,
 Harry Shaw, A.B., *Yale University*,
 Francis Lavelle Smith,
 Walter Roselle Snow,
 James Wallace Sooy,
 Frank Robert Spencer,
 Henry Morris Spofford,
 Anton Benjamin Spurney,
 Edwin McDonald Stanton, B.S., *Iowa State*

College,

Hannah Ophelia Staufft, A.M., *Bucknell Univ.*,
 Charles Edward Street, A.B., *Williams College*,
 William Haverfield Taylor, A.B., *Oberlin Coll.*,
 Ralph Martin Tidd, A.B., *Oberlin College*,
 Lynn J. Tuttle,
 Charles Adam Ulmer,
 Frank Underwood,
 Raymond Abraham Wallace, B.S., *Carleton*

College,

Charles Curtis Wallin, A.B.,
 Edward Everett Webber,
 Albert Andrew Weber, B.S.,
 William Daniel Whitten,
 Orlando Curtis Wicks,
 Emily Widdecombe,
 Edwin Richard Williams,
 Norman Eccles Williamson,
 Charles Webb Yarrington,

Battle Creek.

Calumet.

Portsmouth, O.
Freusburg, N. Y.
Whitinsville, Mass.
Cayutaville, N. Y.
Jackson.
Ann Arbor.
Monticello, Ind.
Franklinville, N. Y.
Cleveland, O.

Ames, Ia.

Pittsburgh, Pa.
Lee, Mass.
Oberlin, O.
Clark, Pa.
Ypsilanti.
Bucyrus, O.
Chicago, Ill.

Pelican Rapids, Minn.

Grand Rapids.
Reese.

Jackson.
Utica, N. Y.
Moline, Ill.
Kent, O.
Ann Arbor.
Montague.
Ann Arbor.

The following students, enrolled in the Department of Literature, Science, and the Arts, are also pursuing studies as second year students in the Department of Medicine and Surgery:

NAME.

Ralph Clark Apted,
 Frank Cameron Kinsey,
 Robert Owen LeBaron,
 Roger Sylvester Morris,
 Bernard Joseph O'Neill, Jr.,
 Clarence Bingham Ripley,

RESIDENCE.

Grand Rapids.
Grand Rapids.
Pontiac.
Ann Arbor.
Dubuque, Ia.
Hinsdale, Ill.

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...
...
...

2000

[illegible]

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1. The first part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

2. The second part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

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10. The tenth part of the document is a list of names and addresses, which appears to be a directory or a list of contacts. The names are written in a cursive script, and the addresses are listed below them.

- Irving John Cross, A.B., *Oberlin College*,
 Elmer Jones Davis, B.S., *Northern Indiana*
Normal School,
 Leslie Benton Dickinson,
 Sumner Egbert Douglas,
 George A. Downs, B.S., *Purdue University*,
 Oscar John Dunning,
 Ward Ellis,
 Fred Durfee Fairchild, B.S., *Pomona College*,
 Adam Ernest Ferguson,
 Wilfred Stedman Fisher,
 James Grimes Fitch,
 James Lewis Fleming, B.S., *Northern Indiana*
Normal School,
 George Hannibal Fletcher,
 Meldrum Burley Floyd,
 Ralph Deems Fox,
 David Donald Gill,
 Wilbur Hawley Gilmore,
 Frederick Thomas Goodsole,
 Harry Burton Grimes,
 Andros Gulde,
 Mark Kerr Hance,
 Charles Benjamin Hare,
 Arthur Field Harrington,
 William Henry Harris,
 John Greenleaf Webb Havens,
 Robert Henderson, Jr.,
 Earl Leslie Hendricks,
 Harry Augustine Hewins,
 Herbert Harrison Hills,
 Maude Goodale Hinman,
 Earl Parker Hobart,
 Arthur James Hood, B.S., *Adrian College*,
 Andrew Jackson Hosmer,
 Woolsey Welles Hunt,
 Loy McAfee Ingham, A.B., *Capitol Female*
College, A.M., Ibid.,
 Leon Jacobs,
 Harrison William Jones,
 Samuel E. Kelly, Jr.,
 Samuel Black Kirker,
 Clara Frances Klopsch,
- Bangor.*
Granville, Ind.
Saginaw, West Side.
Chateaugay, N. Y.
Connersville, Ind.
Jackson.
Pierport.
Howell.
Sault Ste. Marie.
West Brattleboro, Vt.
Magdalena, New Mex.
Postville, Ia.
Ithaca, N. Y.
Dayton, O.
Bloomington, Ill.
Meadville, Pa.
Mount Vernon, Ill.
Calumet.
Moline, Ill.
Chelsea.
Troy, O.
Pawnee City, Neb.
Grand Rapids.
Morris, N. Y.
Toms River, N. J.
Buchanan.
Rock Falls, Ill.
Rankin, Ill.
Flint.
Kingston, N. Y.
Grass Lake.
Adrian.
Ann Arbor.
Grand Rapids.
Detroit.
Albion.
Spring Arbor.
Knobnoster, Mo.
Pittsburgh, Pa.
Michigan City, Ind.

Mark Knabenshue,	Toledo, O.
Otto Henry Kohlhaas,	Calumet.
Edward Dunster Kremers,	Holland.
Arthur Ivan Laughlin,	Saint Johns.
Ford Ten Eyck Lehman,	Canajoharie, N. Y.
Clark M. Leiblee,	Rochester, N. Y.
Louis A. Levison,	Leipsic, O.
Stellar Rudolph Light,	National Military Home, O.
Oscar William Ludwig, A.M., <i>Jasper College,</i>	Evansville, Ind.
George Hubert Lynch,	Canajoharie, N. Y.
Bertha May Louise Lypps,	Kingsville, Ont.
Elba Denton McCarty,	Saginaw.
Norman Percy McGay,	Oak Park, Ill.
Frank William Mackoy,	Wheelerburg, O.
Malcolm Alexander McLennan,	Calumet.
Charles Summers Marsden,	Drayton, N. Dak.
Curtis Campbell Mechling, A.B., <i>Grove City College,</i>	Dayton, O.
Charles H. Merrill,	Marshall.
Fred Henry Meyer,	Mackinaw City.
Owen Joseph Mink,	Wheaton, Ill.
Myrtelle May Moore,	Merlebeach.
Charles Bowman Morden,	Adrian.
Edgar Leon Morrison,	Oak Park, Ill.
James Van Dyke Nelson,	Logansport, Ind.
Tatsuzo Ohno,	Suruga, Japan.
Henry Alexander Ott,	Lansing.
Christopher Gregg Parnall,	Calumet.
Albert Amoss Patterson, Ph.B., <i>DePauw Univ.,</i>	Greencastle, Ind.
Walter May Peck,	Traverse City.
Francis Clark Penoyer,	Bangor.
Roy Carleton Perkins,	Harbor Beach.
Edward Andrew Pillsbury, A.B., <i>Nebraska Univ.,</i>	Lincoln, Neb.
Frank Tuthill Potts,	Lacon, Ill.
John William Powers,	Savanna, Ill.
Elsie Seelye Pratt, B.S., <i>Smith College,</i>	Kalamazoo.
Joseph Hilain Primeau,	Marquette.
William Kendall Pullis,	Austinburg, O.
Anna Weaver Ranes,	Ann Arbor.
Ernest Dean Reed,	Dublin, Ind.
Walter Benjamin Reynolds,	Eaton Rapids.
Charles Wilson Rice,	Fremont, O.
Gordon Warren Rice,	Davenport, Neb.

George Gerard Richards,
 Otto Lee Ricker,
 Frank Thomas Roach,
 Melvin D. Roberts,
 Andrew C. Roche,
 Henry Michael Rooney, A.B., *Boston College*,
 August Henry Roth,
 Ashley Davenport Rowe,
 Melvin John Rowe,
 James Arthur Rowley,
 John Gustavus Rulison,
 Charles Lewis Rumph,
 Elisha Elijah Sayad,
 William Holmwood Sellars,
 Oscar Henry Sellenings,
 Frank Albert Shaver,
 William Samuel Shipp,
 Benjamin Arnould Smillie,
 DeVerne Churton Smith,
 Benjamin Harrison Southworth,
 Carl Frederick Spiesshofer,
 David Ellicott Squiers,
 William Henry Stackable,
 William Henry Steel,
 • John Scott Sterling,
 Carl Clifton Stevens,
 John Edwin Strain,
 Harry Herrick Strout,
 Edward Osband Sutton,
 William Ellwood Tew,
 Frederic Almon Thayer,
 Edwin Leeson Thirlby,
 Pius Lee Thompson,
 Walter Jay Thompson,
 Arthur Richmond Tower,
 Leland Herbert Tower,
 Jacob Sontheimer Ullman,
 Todd Pope Ward,
 Charles Andrew Warmer,
 Roy Watkins,
 Homer Melvin Wellman,
 James Howard Westbrook,
 Herbert Tock White,

Ann Arbor.
Cadillac.
Paw Paw.
Charlotte.
Gregory.
Quincy, Ill.
Erie, Pa.
Lansing.
Battle Creek.
Olivet.
Flushing.
Greene, N. Y.
Ann Arbor.
Pinnebrog.
Chillicothe, O.
Uby.
Eckford.
Decorah, Ia.
Vernon Centre, N. Y.
Reading.
Plymouth, Ind.
Vicksburg.
Chilson.
Mount Clemens.
Spring Arbor.
Evansville, Wis.
Flesherton, Ont.
Durham, Me.
Tacoma, Wash.
Ironwood.
Chilton, Wis.
Traverse City.
Harbor Springs.
Edwardsburg.
Rochester, N. Y.
Union City.
Natchez, Miss.
Mount Vernon, Ill.
Drayton, N. Dak.
Saginaw.
Lakewood, N. Y.
Letts, Ia.
Easton.

Guy Holland Williams,	<i>Richwood, O.</i>
John Ralston Williams,	<i>Rochester, N. Y.</i>
Charles Hodge Williamson, B.S., <i>Lexox College,</i>	<i>Hopkinton, Ia.</i>
Homer Cyrus Wilson,	<i>Detroit.</i>
James Arthur Wilson,	<i>Jackson.</i>
Orlando Garfield Wood,	<i>Chelsea.</i>
Suatchuan Yin,	<i>Amoy, China.</i>
William John Zalesky,	<i>Cedar Rapids, Ia.</i>

The following students, enrolled in the Department of Literature, Science, and the Arts, are also pursuing studies as first year students in the Department of Medicine and Surgery:

NAME.	RESIDENCE.
Frank Staples Bachelder,	<i>Saint Charles, Minn.</i>
Austin Frederick Burdick,	<i>Lansing.</i>
Ernest Cleverdon,	<i>Austin, Ill.</i>
Minnie Pamela Clough,	<i>Detroit.</i>
Robert Burroughs Fields,	<i>Rochelle, Ill.</i>
Louis Merwin Gelston,	<i>Ann Arbor.</i>
Francis Joseph McCue,	<i>Mount Pleasant.</i>
Ward J. MacNeal,	<i>Ann Arbor.</i>
Carl Francis Mehlhop,	<i>Dubuque, Ia.</i>
Arthur Patterson Reed,	<i>Livonia, N. Y.</i>

The two following names should be added to the list of Resident Graduates on page 313:

NAME.	RESIDENCE.
Eva Colt Bagley, M.D., <i>Michigan College of Medicine and Surgery,</i>	<i>Detroit.</i>
Charles Samuel Hosmer, M.D., <i>Rush Medical College,</i>	<i>Romulus.</i>

The name of Ben Franklin Parroit, *Atchison, Kan.*, should be added to the list of First Year Students.

Department of Law.

FACULTY.

JAMES B. ANGELL, LL.D., *President*.
BRADLEY M. THOMPSON, M.S., LL.B.
JEROME C. KNOWLTON, A.B., LL.B.
FLOYD R. MECHEM, A.M.
THOMAS C. TRUEBLOOD, A.M.
OTTO KIRCHNER, A.M.
HARRY B. HUTCHINS, LL.D., *Dean*.
THOMAS A. BOGLE, LL.B.
VICTOR H. LANE, C.E., LL.B.
JAMES H. BREWSTER, Ph.B., LL.B.
HORACE L. WILGUS, M.S.
ELIAS F. JOHNSON, B.S., LL.M., *Secretary*.
AARON V. McALVAY, A.B., LL.B.
JOHN W. DWYER, LL.M.
ALBERT J. FARRAH, LL.B.
JOHN R. ROOD, LL.B.

JOHN B. CLAYBERG, LL.B.,
Non-Resident Lecturer on Mining Law.
VICTOR C. VAUGHAN, Ph.D., Sc.D., M.D.,
Lecturer on Toxicology in its Legal Relations.
MELVILLE M. BIGELOW, Ph.D.,
Non-Resident Lecturer on Insurance.
HENRY C. ADAMS, LL.D.,
Lecturer on the Railroad Problem.
ANDREW C. McLAUGHLIN, A.M., LL.B.,
Lecturer on Constitutional Law and Constitutional History.
RICHARD HUDSON, A.M.,
Lecturer on Comparative Constitutional Law.
HENRY H. SWAN, A.M.,
Non-Resident Lecturer on Admiralty Law.

- FRANK F. REED, A.B.,
Non-Resident Lecturer on Copyright Law.
- ALBERT H. WALKER, LL.B.,
Non-Resident Lecturer on Patent Law.
- WILLIAM J. HERDMAN, M.D., LL.D.,
Lecturer on Neurology, Electrology, and Railway Injuries.
- JOSEPH H. DRAKE, A.B.,
Lecturer on Roman Law.
- DALLAS BOUDEMAN, M.S.,
Non-Resident Lecturer on Michigan Statutes.

STUDENTS.

RESIDENT GRADUATE.

NAME.	RESIDENCE.
Oscar Otto Bader, LL.B.,	<i>New Albany, Ind.</i>

THIRD YEAR STUDENTS.

NAME.	RESIDENCE.
Edward John Abersol,	<i>Metamora, Ill.</i>
John Adams,	<i>Edmond, Okla. T.</i>
Raymond Brown Alberson,	<i>Washington, Ia.</i>
William Lindsay Allen,	<i>Sac City, Ia.</i>
George Firth Anderson,	<i>Sand Creek.</i>
Guy Ashton Andrews, A.B., <i>Dartmouth College,</i>	<i>Providence, R. I.</i>
Edwin Maurice Ashcraft, Jr.,	<i>Chicago, Ill.</i>
Frederick Richard Austin,	<i>Detroit.</i>
Lucius Babcock,	<i>Ionla.</i>
Grant Wilson Baker, LL.B., <i>Indiana University,</i>	<i>Brookville, Ind.</i>
William Nelson Ballou,	<i>Huntertown, Ind.</i>
Joshua Francis Barbee, A.B., <i>Westminster College,</i>	<i>Excelsior Springs, Mo.</i>
William J. Barnard,	<i>Berlanton.</i>
Rolland Emery Barr,	<i>Buchanan.</i>
Rupert John Barry,	<i>Chicago, Ill.</i>
Charles Edward Barthell,	<i>West Superior, Wis.</i>
Homer Ward Batson, A.B., <i>Kentucky University,</i>	<i>Lancaster, Ky.</i>
Harold Clifton Beatty,	<i>Utica.</i>
Guy Clayton Beckwith,	<i>Benton Harbor.</i>
Frederick Warren Bigelow,	<i>Detroit.</i>
Albert Eugene Boynton,	<i>Oroville, Cal.</i>
John Eli Brondige,	<i>Pontiac.</i>
William Campbell Brooks,	<i>Saginaw.</i>

Jesse Robert Stratford Budge,	<i>Paris, Idaho.</i>
Walter Victor Bulleit,	<i>Corydon, Ind.</i>
Herbert Bernard Buster,	<i>Charleston, W. Va.</i>
Frank Butler,	<i>Rochester, N. Y.</i>
Florian Amede DeBourn Carnal,	<i>Waddington, N. Y.</i>
John Gordon Carter, Ph.B., <i>Illinois College,</i>	<i>Jacksonville, Ill.</i>
Joseph Duncan Chamberlain,	<i>Dayton, O.</i>
Albert Morgan Cloud, B.S., <i>Lenox College,</i>	<i>Earlville, Ia.</i>
Philip Marion Cloud,	<i>Earlville, Ia.</i>
Frederick Charles Cogshall,	<i>Benton Harbor.</i>
Burnell Colson,	<i>Fremont, Neb.</i>
Harry Steele Commager,	<i>Toledo, O.</i>
Thomas Arthur Conlon,	<i>Eaton Rapids.</i>
Everett Connelly,	<i>Casey, Ill.</i>
Curtis Leigh Converse,	<i>Plain City, O.</i>
Henry Aaron Converse,	<i>Springfield, Ill.</i>
Byron Henry Coon, Ph.B.,	<i>Ann Arbor.</i>
Allen Priest Cox,	<i>Detroit.</i>
Frank Goodwin Crane A.B., <i>Brown University,</i>	<i>Toledo, O.</i>
Charles Fair Crothers,	<i>San José, Cal.</i>
Jerome Joseph Crowley,	<i>Chicago, Ill.</i>
Edward Jacob Daehler,	<i>Portsmouth, O.</i>
William Frederick Dains,	<i>Ann Arbor.</i>
John Boyce Dandridge, B.S., <i>Northern Indiana</i>	<i>Chicago, Ill.</i>
<i>Normal School,</i>	<i>Denver, Col.</i>
Horace Warren Danforth, B.L.,	<i>Danby.</i>
Ernest George Davids,	<i>Chicago, Ill.</i>
William Burt Davies,	
George Newton Davis, A.B., <i>Missouri Valley</i>	<i>Marshall, Mo.</i>
<i>College,</i>	<i>Provo City, Utah.</i>
Moses Cozzens Davis,	<i>Canton, Ohio.</i>
William Louis Day,	<i>Hopkinsville, Ky.</i>
Joseph Gish Donaldson, A.B., <i>Bethel College,</i>	<i>Cleveland, O.</i>
Harry James Doolittle,	<i>Lebanon, O.</i>
Heber Lincoln Drake,	<i>Hiawatha, Kan.</i>
Arthur Wood Dunn,	<i>Beardstown, Ill.</i>
Charles Clarence Dutch,	<i>Forreston, Ill.</i>
Martin Hancock Eakle,	<i>Saint Joseph, Mo.</i>
Louis Herman Ehrlich,	<i>Omaha, Neb.</i>
Alfred George Ellick,	<i>Rutherford, N. J.</i>
Addison Ely, Jr., A.B., <i>Columbia University,</i>	<i>Coalville, Utah.</i>
Peter Carlos Evans,	<i>Berrien Springs.</i>
Frank Bradley Fancher,	

Louis Henry Fead,	<i>Lexington.</i>
Walter Eliot Ferguson,	<i>Detroit.</i>
Ernest Franklin Ferree, B.S., <i>National Normal University,</i>	<i>Pasco, O.</i>
Joseph John Fiedler,	<i>Mineral Point, Wis.</i>
George Rinaldo Fish, B.S., <i>Northern Indiana, Normal School,</i>	<i>Logansport, Ind.</i>
Lewis Fisher,	<i>Centerville.</i>
David William Flynn, LL.B., <i>Kansas City School of Law,</i>	<i>Leavenworth, Kan.</i>
Carl Boughton Ford,	<i>Burton, O.</i>
William Louis Ford,	<i>White Sulphur Springs, Mon.</i>
Andrew Jackson Freeborn,	<i>Washington, Kan.</i>
Charles Albert Frueauff,	<i>Denver, Col.</i>
Charles Andrew Funkhouser, A.B., <i>Otterbein University,</i>	<i>Dayton, O.</i>
Shigetsuna Furuya, <i>Doshisha College,</i>	<i>Shimo-uwa, Japan.</i>
William Clayton Geake,	<i>Fort Wayne, Ind.</i>
Robert Henry Gittins,	<i>Oswego, N. Y.</i>
Frederick Philip Glasser,	<i>Pittsburgh, Pa.</i>
George Wood Govert, A.B., <i>Illinois College, A.B., Yale University,</i>	<i>Quincy, Ill.</i>
James Almon Greene,	<i>Pinckney.</i>
George Robert Gunn,	<i>Ypsilanti.</i>
Herbert Eugene Guthrie,	<i>Ventura, Cal.</i>
William Aloysius Halpin,	<i>Hadley.</i>
Lyle Blake Hamilton,	<i>Jackson.</i>
Otto Henry Hans,	<i>South Bend, Ind.</i>
John Eugene Harding,	<i>Excelllo, O.</i>
John William Harrison, LL.B., <i>University of Kansas,</i>	<i>Topeka, Kan.</i>
Joseph Lewis Harter, A.B., <i>Indiana University,</i>	<i>Flora, Ind.</i>
Fred William Hartsburg,	<i>North Aurora, Ill.</i>
John Francis Haskett,	<i>Bottineau, N. Dak.</i>
John Henry Hauberg, A.B., <i>Northern Indiana Normal School,</i>	<i>Hillsdale, Ill.</i>
Ira Moses Hawkins,	<i>Goshen, N. Y.</i>
Joy Ernest Heck, B. S., <i>Mich. Agr. Coll.,</i>	<i>Burnips Corners.</i>
Henry Helfman, A.B.,	<i>Detroit.</i>
Clayton Homer Hoffman,	<i>Allegan.</i>
Evans Holbrook, A.B., <i>Leland Stanford, Jr., University,</i>	<i>Onawa, Ia.</i>
Ned Y. Howell,	<i>Salem, O.</i>

Thomas Stilwell Huntley,	<i>Huntley, Ill.</i>
Theodore K. Jackson,	<i>Chicago, Ill.</i>
Ralph Hartwell Jernegan,	<i>Mishawaka, Ind.</i>
Dana Thompson Jones,	<i>Lansing.</i>
Charles Frank Juttner,	<i>Menominee.</i>
William Peter Kavanagh,	<i>Denver, Col.</i>
Patrick Henry Kelley,	<i>Mount Pleasant.</i>
William Lewis Kelley,	<i>Detroit.</i>
Abe Jay Kempner, LL.B., <i>University of</i>	
<i>Arkansas,</i>	<i>Little Rock, Ark.</i>
Edward Percival Kirby,	<i>Grand Haven.</i>
Walter George Kirkbride,	<i>Ann Arbor.</i>
Rutherford Burges Hayes Kramer,	<i>Elgin, Ill.</i>
William Donald Kyle,	<i>Butte, Mon.</i>
William Oliver Lee,	<i>Bristol, Ind.</i>
John Camillus Lehr,	<i>Monroe.</i>
Wilbur Rutherford Lemley,	<i>Quincy, Ill.</i>
George William Levin,	<i>Michigamme.</i>
Carl Lindenman,	<i>Chicago, Ill.</i>
Oscar Edward Linderholm,	<i>Chicago, Ill.</i>
Clyde Maxwell Line,	<i>Sidney, O.</i>
Peter Michael Lippert,	<i>Pittsburgh, Pa.</i>
Albert Victor Long,	<i>La Crosse, Ind.</i>
Fred W. Loomis,	<i>Battle Creek.</i>
Leo Bennett Lowenthal,	<i>Chicago, Ill.</i>
Clarence Mansfield Lyle,	<i>Cassopolis.</i>
Thomas Eddy Lyon, B.S., <i>Kansas Agr. Coll.,</i>	<i>Manhattan, Kan.</i>
John Braden McAadoo, Ph.B., <i>Grove City College,</i>	<i>West Lebanon, Pa.</i>
William McCready, B.S., <i>Lenox College,</i>	<i>Onslow, Ia.</i>
Charles Gilman McDonald, B.S., <i>Oberlin College.</i>	<i>Fremont, Neb.</i>
Duncan McFarlane,	<i>Rock Island, Ill.</i>
Charles Francis McKenzie,	<i>Banfield.</i>
Bert Ellsworth McLaughlin,	<i>Alpha, Ill.</i>
Aaron Mandelbaum,	<i>Wabash, Ind.</i>
Edmund Jacob Mautz,	<i>Stewardson, Ill.</i>
Frank Harry Mehlberg,	<i>Fenton.</i>
John Felix Dryden Meighen, M.L., <i>Upper Iowa</i>	
<i>University,</i>	<i>LeRoy, Minn.</i>
William Henry Meschede,	<i>Laynesville, Mo.</i>
William John Meyers, B.S., <i>Mich. Agr. Coll.,</i>	<i>Fort Collins, Col.</i>
Guy Alonzo Miller, A.B.,	<i>Detroit.</i>
Carl Frank Mohr,	<i>Wall Lake, Ia.</i>
Frank Ruhlman Monfort,	<i>Ithaca.</i>

John Ambrose Montgomery,	<i>Macon, Ill.</i>
W. Henry Montgomery, LL.B., <i>University of</i>	
<i>Kansas,</i>	<i>Troy, Kan.</i>
Will Cornelius Moody,	<i>Shelby.</i>
Elmer William Mulford,	<i>Detroit.</i>
Arthur Francis Mullen,	<i>O'Neill, Neb.</i>
Edward Camillus Mulroney,	<i>Fort Dodge, Ia.</i>
Lewis Edgar Murphy,	<i>Elgin, Ill.</i>
John William Myers,	<i>Ithaca.</i>
Charles Almon Niman, Ph.B., <i>Hiram College,</i>	<i>Aurora, O.</i>
James O'Brien,	<i>Ann Arbor.</i>
Sylvester O'Connor,	<i>Detroit.</i>
Floyd Russell Olmsted,	<i>Kalamazoo.</i>
James Bernard Onen,	<i>Dowagiac.</i>
Julian Arthur Oppenheimer,	<i>Oskaloosa, Ia.</i>
August Henry Overschmidt,	<i>Ann Arbor.</i>
Harry Williams Paddock, A.B., <i>Yale University,</i>	<i>Springfield, Ill.</i>
John Marshall Parker, B.L.,	<i>Ann Arbor.</i>
Ralph Parker,	<i>Kansas City, Mo.</i>
Roy Elton Pettit,	<i>Ithaca.</i>
Pleasant Irving Phillips,	<i>Grand Rapids.</i>
Frederick Willis Potter,	<i>Henry, Ill.</i>
Harry Barent Potter,	<i>Saginaw, West Side.</i>
Leo M. Rappaport,	<i>Indianapolis, Ind.</i>
Charles Henry Reynolds,	<i>Grand Rapids.</i>
John Alfred Rine,	<i>Fremont, Neb.</i>
Mory Franklin Ringolsky,	<i>Cheyenne, Wyo.</i>
William Bennallack Rodda,	<i>Kansas City, Mo.</i>
Harry Rosenhaupt,	<i>Spokane, Wash.</i>
William Edward Rydallch,	<i>Provo City, Utah.</i>
Rolla Eaton Samson,	<i>East Berkshire, Vt</i>
Orville Joseph Saville,	<i>Butte, Mon.</i>
Thomas Stephen Silliman,	<i>Hudson, Wis.</i>
Charles Simons, B.L.,	<i>Detroit.</i>
Frank Stanton Simons, A.B.,	<i>Detroit.</i>
Charles Clement Smith, B.S., <i>Ohio University,</i>	<i>Pleasant Run, O.</i>
Edward Woods Soar,	<i>Audubon, Ia.</i>
Mortimer Alonzo Sooy,	<i>Grand Rapids.</i>
Albert Augustus Stegeman,	<i>Allegan.</i>
Emil Nels Stenberg,	<i>Dowagiac.</i>
Barnard Joseph Stewart,	<i>Salt Lake City, Utah.</i>
Earl Ruthven Stewart,	<i>Grand Rapids.</i>
Franklin John Stransky,	<i>Savanna, Ill.</i>

Frederick Lykes Stringer, A.B., *Florida Agricultural College,*

Richard Huss Sutphen, A.B.,

Frank Raymond Sweasey,

Warren C. Swisher,

James Symington,

DeWitt Clinton Tanner,

Richard Taper, Jr.,

Jesse Elihu Tarbell,

Claude Lorraine Tarbox,

O. Clyde Taylor,

Clayton Tryon Teetzel,

Russell B. Thayer,

Mathonihah Thomas,

Charles Henry Thompson, A.B., *Tarkio College,*

Clyde Hugh Thompson,

Fulton Thompson,

Nathan Platt Thompson,

Julien Harrington Thomson,

McLane Tilton, Jr.,

Maurice Clark Turner,

Leon Lewis Tyler,

Emma Sarah Tyndale,

Franklin Earnnest Vale, LL.B., *University of Kansas,*

Samuel Hale Van Horn,

George von Nieda,

Paul Warren Voorhies, B.L.,

Roy Judson Wade,

Charles A. Ward,

Harry Anthony Warren,

Charles Lee Watson, A.B.,

John Edgar Watson,

Maurice Weigle,

David Palmer Weimer,

Ara Weldon,

Charles Henry Weldon, Jr.,

William Augustus Westfall,

George Samuel Wiley,

Charles Edmund Williams,

Howard Ralph Hugh Williams,

Wallace A. Williams, B.D., *Saint Lawrence University, LL.B., Drake University,*

Brookville, Fla.

Defiance, O.

Eureka, Cal.

Ann Arbor.

Detroit.

Chicago, Ill.

Lake Linden.

Muir.

Jackson.

Kansas City, Mo.

Chicago, Ill.

Saginaw.

Salt Lake City, Utah.

Tarkio, Mo.

Pontiac, Ill.

Stamford, Conn.

Port Huron.

Port Huron.

Norfolk, Va.

Monroe.

Grand Ledge.

Newberry.

Attica, Kan.

Three Rivers.

Fargo, N. Dak.

Ann Arbor.

White Pigeon.

Ann Arbor.

Jerseyville, Ill.

Owosso.

Butler, Pa.

Carlyle, Ill.

Johnstown, Pa.

Eaton Rapids.

Eaton Rapids.

Savanna, Ill.

Earlville, Ill.

Saline.

Cho

Wellington Wordsworth Withenbury,	<i>Shelby.</i>
Walter Hugh Witt,	<i>Almont.</i>
Carver Charles Wood,	<i>Angola, Ind.</i>
Thomas Robert Woodrow, A.B.,	<i>Ann Arbor.</i>
William Grant Woods, A.B., <i>Ada University,</i>	<i>Dunkirk, O.</i>
Benjamin Smith Wright,	<i>Utica.</i>
James Forbis Yeager,	<i>Kansas City, Mo.</i>
Louis Zimmerman,	<i>Chicago, Ill.</i>
William Jason Zimmers,	<i>Racine, Wis.</i>

SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
William Harrison Abbott,	<i>New Whatcome, Wash.</i>
Ivan Oliver Ackley,	<i>Port Huron.</i>
William Bert Alexander,	<i>Addison.</i>
Noa Webster Aluli,	<i>Wailuku, Maui, Hawaiian Islands.</i>
Walter Freeman Ames,	<i>Chardon, O.</i>
Norman Kendall Anderson, A.B., <i>University of</i> <i>Chicago,</i>	<i>Morgan Park, Ill.</i>
Robert Talbot Anderson,	<i>Greenville, O.</i>
Aaron Andrew Andrews,	<i>Chicago, Ill.</i>
Claude Youatt Andrews, A.B., <i>Franklin College,</i>	<i>Dana, Ind.</i>
Edouard Walter Aniba,	<i>Ann Arbor.</i>
Harold Lee Arnold,	<i>Plainwell.</i>
DeLaFayette Meade Austin,	<i>Liberty, Idaho.</i>
Walter S. Baer,	<i>Hancock.</i>
Herman William Bailey,	<i>Brent Creek.</i>
James Harold Baker,	<i>Mount Morris, N. Y.</i>
Charles Clyde Barker,	<i>Chicago, Ill.</i>
Curtis Elsworth Baylor,	<i>Cuba, Ill.</i>
Clark Donaldson Beggs,	<i>Pittsburgh, Pa.</i>
Ralph Clifford Bell,	<i>Schoolcraft.</i>
Herbert Ephraim Blackledge,	<i>Keosauqua, Ia.</i>
Gideon Westervelt Blain,	<i>Plymouth, Ind.</i>
George Neil Blatt, Ph.B.,	<i>Elwood, Ill.</i>
Fred Mariner Bond,	<i>North Farmington.</i>
Walter Huntington Bond,	<i>Freeport, N. Y.</i>
Daniel Lester Brown,	<i>Jackson.</i>
Leland Hamilton Buckley,	<i>Edwardsville, Ill.</i>
Henry Eugene Burgess,	<i>Aledo, Ill.</i>
Thomas Luther Campbell, A.B., <i>State College</i> <i>of Kentucky,</i>	<i>Clinton, Ky.</i>

Claude George Cannon, Ph.B., <i>Albion College,</i>	<i>Vicksburg.</i>
Martin Henry Carmody, Ph.B.,	<i>Grand Rapids.</i>
Weir Duroc Carver,	<i>Avilla, Ind.</i>
Wallace Caswell,	<i>Cherokee, Ia.</i>
Henry Catrow,	<i>Miamsburg, O.</i>
Warren Prout Chaney,	<i>Topeka, Kan.</i>
James Chenoweth,	<i>Greenville, O.</i>
Henry Lyman Child,	<i>Springfield, Ill.</i>
Thomas Henry Christiansen,	<i>Nicolaus, Cal.</i>
Earl Francis Cochrane,	<i>Apollo, Pa.</i>
Llewellyn Cole,	<i>Manawa, Wis.</i>
Paul Michael Collins,	<i>Peotone, Ill.</i>
Raymond Albert Colwell,	<i>Lake Odessa.</i>
Frank Coolbaugh Condon,	<i>Ann Arbor.</i>
Robert McClain Corbit,	<i>Onslow, Ia.</i>
Charles David Correll,	<i>Illioopolis, Ill.</i>
W. Glenn Cowell,	<i>Reading.</i>
Allen Brown Creighton, B.S., <i>Bethany College,</i>	<i>Ann Arbor.</i>
George Henry Curtis,	<i>Jackson.</i>
Charles Eugene Davis,	<i>Cottonwood Falls, Kan.</i>
Manley Daniel Davis,	<i>Pontiac.</i>
Alfred James Day,	<i>Rising Sun, O.</i>
Maurice Deiches,	<i>Pottsville, Pa.</i>
Charles Fisher Delbridge, B.L.,	<i>Detroit.</i>
David Telford Dennison, B.S., <i>Ohio Normal</i>	
<i>University,</i>	<i>Coal Glen, Pa.</i>
Leonard Y. Devries,	<i>Holland.</i>
Metus Troy Dickinson, A.M., <i>Trinity College,</i>	<i>Fremont, N. C.</i>
George Emil Dierssen,	<i>Chicago, Ill.</i>
Martin Steedman Dodd,	<i>Toledo, O.</i>
Stonewall Jackson Dodson, LL.B., <i>Cumberland</i>	
<i>University,</i>	<i>Beckwith, Tenn.</i>
Glenna Hunter Doust,	<i>Allentown, Pa.</i>
Charles Jacob Dovel, Ph.B.,	<i>Manistee.</i>
Charles Harrison Duncan,	<i>Urbana, O.</i>
Wilton Haynsworth Earle, B.L., <i>Furman</i>	
<i>University,</i>	<i>Greenville, S. C.</i>
Henry C. Fedderson,	<i>Camanche, Ia.</i>
Carleton Gillespie Ferris, B.S., <i>Purdue Univ.,</i>	<i>Big Rapids.</i>
Marion Bertelle Fleisher, B.S., <i>Northern Illinois</i>	
<i>Normal College,</i>	<i>Corydon, Ia.</i>
Andrew Madison Forrester, A.B., <i>Bucknell Univ.,</i>	<i>Moreland, Pa.</i>
Claude Colville Frazer,	<i>Ann Arbor.</i>

Numa Charles Frenger,	<i>Las Cruces, N. Mex.</i>
George Sanborn Gage,	<i>Saginaw.</i>
Harry Joseph Porter George,	<i>Blacklick Station, Pa.</i>
Harold Guthrie Geyer, Ph.B., <i>Scarritt College,</i>	<i>Neosho, Mo.</i>
Edward Francis Gibbons,	<i>Pittston, Pa.</i>
Floye Victoria Gilmore,	<i>Elwood, Ind.</i>
John Maxwell Gould,	<i>Ypsilanti.</i>
John Morton Grisier,	<i>Jefferson, Ia.</i>
Harry A. Groves,	<i>Webster City, Ia.</i>
Harry L. Guggenheim,	<i>Hillsdale.</i>
Hermann Paul Haase,	<i>Chicago, Ill.</i>
Charles Pierce Hall, A.B., <i>Hobart College,</i>	<i>Red Wing, Minn.</i>
Henry Hugo Hansen,	<i>Chicago, Ill.</i>
Losh O. Alfonso Harbaugh, B.S., <i>Northern</i>	
<i>Indiana Normal School,</i>	<i>Brandt, O.</i>
Howard Wood Hayes,	<i>Chicago, Ill.</i>
Samuel Robert Hazard,	<i>Des Moines, Ia.</i>
William Lionel Heap,	<i>Muskegon.</i>
John Hubert Behmer Heinemann,	<i>Chicago, Ill.</i>
Carl Henry Henkel,	<i>Galion, O.</i>
Henry Patterson Herdman, Ph.B.,	<i>Zanesville, O.</i>
George Ojea Hilzinger, B.S., <i>University of</i>	
<i>Arizona,</i>	<i>El Paso, Tex.</i>
Dorsey Reno Hoppe, B.L.,	<i>Chelsea.</i>
Adrian Samuel Houck,	<i>Wichita, Kan.</i>
James Romeo Hughes, Jr.,	<i>Fayette, Mo.</i>
Frank Davis Hunt,	<i>Santa Ana, Cal.</i>
Earl Wellington Husted,	<i>Fenton,</i>
James Ingebretsen,	<i>Ogden, Utah.</i>
Sully James,	<i>Detroit.</i>
D'Arcy Lloyd Johnson,	<i>Alma.</i>
Harry Edwin Johnson,	<i>Quincy, Ill.</i>
Charles Landon Jones,	<i>Davisburg.</i>
William Theodore Judd,	<i>Mount Vernon, Ill.</i>
John Wesley Judson,	<i>Detroit.</i>
William John Kass,	<i>Remsen, Ia.</i>
Martin Thomas Kelly,	<i>Pittsburgh, Pa.</i>
George Henry Kemp,	<i>Ann Arbor.</i>
Hugh Keneipp,	<i>Mount Carmel, Ill.</i>
James Edward Kerr,	<i>Los Gatos, Cal.</i>
Frank Kimmel,	<i>Lafayette, Ind.</i>
Walter Leslie Kinney,	<i>Owosso.</i>
Lewis Haight Kirby,	<i>Kalamazoo.</i>

William Henry Klose,	<i>Petoskey.</i>
Willard Andrew Knight,	<i>Battle Creek.</i>
Fred Charles Knollenberg,	<i>Quincy, Ill.</i>
Leonard Fillmore Knowles,	<i>Saint Louis.</i>
Stuart Milton Kohn,	<i>Ogden City, Utah.</i>
Louis Alvin Kreis, B.L.,	<i>Cincinnati, O.</i>
Erles Barnet Kresge,	<i>Pittston, Pa.</i>
Theodor Franklin Lake,	<i>Mansfield, O.</i>
John Ernest Lander,	<i>Knoxville, Ill.</i>
Alexander Hector Langell,	<i>Ann Arbor.</i>
Stephen Douglas Lardie,	<i>Old Mission.</i>
Lewis Larson,	<i>Manti, Utah.</i>
Percy Putnam Learned,	<i>Chester, Vt.</i>
Edwin George Leipheimer,	<i>Chicago, Ill.</i>
Llewellyn J. Lewis,	<i>Bangor.</i>
Frederick Jacob Lichtenberger,	<i>Savanna, Ill.</i>
Thomas George Long,	<i>Dearborn.</i>
John Christopher Loucks,	<i>Grand Rapids.</i>
Charles James Luttrell,	<i>Fort Jones, Cal.</i>
George Pollard Lyon,	<i>Delphi, Ind.</i>
Lewis Wilson McCandless, A.B.,	<i>Ann Arbor.</i>
Stanley Kane McDonell,	<i>Grand Rapids.</i>
Roy Everette McEwen,	<i>Leonidas.</i>
Ellis Johnson McGregor,	<i>Pontiac, Ill.</i>
James Galbraith McHenry, Ph.B.,	<i>Lansing.</i>
Rufus Cole McKinley, B.S., <i>Westminster College,</i>	<i>New Wilmington, Pa.</i>
Archibald Harold McMillan, A.B.,	<i>Bay City.</i>
George Fred MacNeal,	<i>Ann Arbor.</i>
James Aloysius Madden,	<i>Lyons, Ia.</i>
Thomas Rankin Marks, B.S., <i>Purdue University,</i>	<i>LaFayette, Ind.</i>
Francis Rockwell Marvin,	<i>Akron, O.</i>
Judd Henry Matthews,	<i>Logansport, Ind.</i>
Harold Solomon Mayer,	<i>Natchez, Miss.</i>
Rice William Means,	<i>Denver, Col.</i>
Roy Chester Megargel,	<i>Scranton, Pa.</i>
Theron Ferson Miller,	<i>Niles.</i>
Herman Troy Miller,	<i>Visalia, Cal.</i>
George Alfred Mitiguy,	<i>East Berkshire, Vt.</i>
Paul Broadley Moody, A.B.,	<i>Detroit.</i>
Benjamin Bernard Morris,	<i>Chicago, Ill.</i>
James Duval Mosby, A.B., <i>William Jewell College,</i>	<i>Mosty, Mo.</i>
Roy Edgar Mygatt,	<i>Augusta.</i>
Albert Lawrence Neal,	<i>Indiana, Pa.</i>

Amil Frank Nerlinger,	<i>Traverse City.</i>
Leroy Vernon Newcomb,	<i>Ann Arbor.</i>
Giles Benton Nichols,	<i>Detroit.</i>
Timothy Francis Nolan,	<i>Ishpeming.</i>
Culbert Levy Olson,	<i>Salt Lake City, Utah,</i>
Daniel Herman Ortmeyer,	<i>Evansville, Ind.</i>
Charles Brainerd Paddock, B.S.,	<i>Wichita, Kan.</i>
Charles Gordon Mason Parker,	<i>Detroit.</i>
Francis Vredenburg Partridge,	<i>Bowling Green, Mo.</i>
Percy Seaman Peck,	<i>Grand Rapids.</i>
James Blakeley Pell,	<i>Akron, O.</i>
Seymour Howe Person,	<i>Howell.</i>
Clarence Schnuhr Piggott,	<i>Chicago, Ill.</i>
Edwin Potter,	<i>Chicago, Ill.</i>
Fred Wirt Potter,	<i>Ludington.</i>
John Logan Price,	<i>Janesville, Ill.</i>
Elroy McFarlin Priest,	<i>Corunna.</i>
Henry Ormand Probasco,	<i>Muir.</i>
Edwin Rawden,	<i>Ann Arbor.</i>
Frank Wood Reed,	<i>Evart.</i>
Aaron Bar Reynolds,	<i>Fort Jones, Cal.</i>
Allan Warren Reynolds,	<i>Cassopolis.</i>
Thomas Gideon Roach,	<i>Fulton, Ky.</i>
Harry Edward Rodgers,	<i>Grand Rapids.</i>
Clifford Griffith Roe, B.L.,	<i>Ann Arbor.</i>
John Franklin Rude,	<i>Liberty, Ind.</i>
William Burton Russell, B.S., <i>Northern Indiana</i>	
<i>Normal School,</i>	<i>Adel, Ia.</i>
Perry Andrew Sadler,	<i>Hudson.</i>
Frank Lincoln Sage, B.S., <i>Mount Union College,</i>	<i>Ann Arbor.</i>
George Washington Sample,	<i>Keosauqua, Ia.</i>
Elmer Madden Sayles,	<i>Akron, Ia.</i>
Henry Bernard Schantz,	<i>Pekin, Ill.</i>
Louis Henry Schroeder, A.B., <i>Illinois College,</i>	<i>Quincy, Ill.</i>
Frank Douglass Scott,	<i>Alpena.</i>
John Walter Scott,	<i>Monroe.</i>
Ralph William Murgotten Shauman,	<i>Ann Arbor.</i>
Benjamin West Sherwood,	<i>Kankakee, Ill.</i>
Sandy Simmons, B.S., <i>Allen University,</i>	<i>Ann Arbor.</i>
Cally Monroe Smith,	<i>Saint Johns.</i>
David Flanders Smith,	<i>Indianapolis, Ind.</i>
Ashby Snow,	<i>Saint George, Utah.</i>
LaMotte Gerald Spaulding,	<i>Conneaut, O.</i>

Gottfried Cotton Steinke,	<i>Atlantic, Ia.</i>
Alvah Ross Stockwell,	<i>Pontiac.</i>
David Percy Strickler,	<i>Mendon, Ill.</i>
Joseph Wilkinson Stringfellow,	<i>Salt Lake City, Utah.</i>
Timothy John Sullivan,	<i>Roodhouse, Ill.</i>
Edson Read Sunderland, A.M.,	<i>Ann Arbor.</i>
Benjamin Franklin Tait,	<i>Decatur, Ill.</i>
George Burrows Taylor, A.B., <i>Leland Stanford,</i>	
<i>Jr., University,</i>	<i>Edwardsville, Ill.</i>
Gardner Milligan Thompson,	<i>Prairie Home, Ill.</i>
Oliver Jesse Todd,	<i>Lerna, Ill.</i>
William Campbell Todd, A.B., <i>Lincoln Univ.,</i>	<i>Springfield, Mass.</i>
William Brown Torrance, A.B., <i>Hanover College,</i>	<i>Terre Haute, Ind.</i>
John Meredith Tribble, A.M., <i>Bethany College,</i>	<i>Ann Arbor.</i>
Hardy Deland Trickey,	<i>Winchester, Ill.</i>
John Douglass Venator,	<i>Lakeview, Ore.</i>
Charles Trueman Venners,	<i>AuSable.</i>
Leonard D'Ooge Verdier, A.B.,	<i>Grand Rapids.</i>
George Leo Weadock,	<i>Saginaw.</i>
Clyde Irvin Webster, Ph.B.,	<i>Eaton Rapids.</i>
Harry Isaac Weinstein,	<i>Phillipsburg, Mon.</i>
Samuel Lincoln Weiser,	<i>Preston, Minn.</i>
George Granville Whitcomb,	<i>Morrison, Ill.</i>
Henry Claire White,	<i>Decatur.</i>
Charles Frederick Whitmore, Jr.,	<i>Kankakee, Ill.</i>
Matthew Beale Whittlesey, Ph.B.,	<i>Detroit.</i>
Krekel Dillon Willbanks,	<i>Mount Vernon, Ill.</i>
George Lynn Wood, B.S., <i>Tarkio Collège,</i>	<i>Tarkio, Mo.</i>

FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Roscoe Perl Ady,	<i>Colorado Springs, Col.</i>
Barnie Alexander,	<i>New Philadelphia, O.</i>
Clyde Alexander,	<i>Waconsta.</i>
John Park Alexander, B.S., <i>Case School of</i>	
<i>Applied Science,</i>	<i>Akron, O.</i>
Delos Andrew Alig,	<i>Indianapolis, Ind.</i>
Winfred Murrell Alston,	<i>Charleston, S. C.</i>
Curtis DeWitt Alway,	<i>Manistee.</i>
Elmer James Alway,	<i>Manistee.</i>
Edward Williams Amsden,	<i>Mount Clem</i>
Anthony Marion Arntson,	<i>Tacoma, W</i>

William Fleming Atterholt, A.B., *Mount Union College,*

Henry Wood Axford,
Frank Merrill Ayers,
Will Henry Babcock,
John William Bailey,
Nathan Edgar Bailey,
Orla Hub Baker,
Oscar William Baker,
Clarence Wesley Barber,
Lee Thomas Barkenbus,
Burt Etheridge Barlow,
Rollo Clifton Barnum,
William Frederick Basler,
Jessie Belle Bassett,
Robert Smith Bassett,
George Andrew Batterson,
Carter Braxton Bearss,
Fountain Fox Beattie,
Charles Norton Belcher, A.M., *University of*

Kansas,

José Eladio Benedicto, A.B., *Madrid University,*
Manuel Raul Benedicto, A.B., *Madrid Uni-*

versity,

Paul Philip Bennett,
Benjamin A. Bickley,
David Booner Bird,
Clifford Alonzo Bishop,
Frank P. Blair,
Charles Fred Bliss,
William Carpenter Bliss, A.M., *Brown Uni-*

versity,

Thomas H. Blodgett, B.S., *Knox College,*
Joseph D. Blunt,
Menno Boersema,
Norman Turner Boose,
Eugene Prescott Boyd,
Frank Austin Boyer,
George Austin Breaden,
Harlan Paul Briggs,
Roy Frank Britton,
Archie Broomfield,
Arthur Henry Brown,

Lisbon, O.

Rochester.

Grand Rapids.

Conklin.

Battle Creek.

Tipton.

Vassar.

Bay City.

Niagara Falls, N. Y.

Kalamazoo.

Coldwater.

Petoskey.

Jackson.

Indianapolis, Ind.

New Comerstown, O.

Wheelersburg, O.

Peru, Ind.

Greenville, S. C.

Lawrence, Kan.

San Juan, Puerto Rico.

San Juan, Puerto Rico.

Rockford, Ill.

Hamilton, O.

Ann Arbor.

Byron.

Homer.

Durham, Me.

East Providence, R. I.

Detroit.

Florence, Col.

Muskegon.

Rockwood, Pa.

Dresden, Tenn.

Pine Grove, Pa.

Providence, R. I.

Reading.

Tyler, Tex.

Millbrook.

Saint Joseph.

Charles Eggleston Brown,
 Frank Andrew Brown,
 William Henry Brown,
 John Breton Brunot,
 Frederick Starr Buggie,
 Wilber Newton Burns,
 Claud Burton,
 Harry William Cable,
 Roscoe Call,
 Leander Randall Canfield, Ph.B., *Ohio State University*,
 Richard Andrew Caswell,
 Harry Montague Carpenter,
 Gaylord Harold Case,
 Lawrence William Casserly,
 Wilbur Kenyon Chamberlin,
 William Newton Chambers,
 Gilford Arthur Chappell,
 Levi Dennis Cicel,
 William Burdick Clark,
 William J. Clark,
 Wilson Warner Clark,
 Duane Perry Cleghorn,
 Charles Francis Clyne,
 Frank Chester Collier,
 Joseph Robert Collier,
 George Washington Bryant Conrad,
 Ward Burroughs Connine,
 John Delbert Coply,
 Bernard Corrigan,
 Harry Crosby Cotter,
 John Alexander Craig,
 Charles Sylvanus Crane,
 Bryant Scofield Cromer,
 Avon Horace Crook,
 John Dalton,
 Egbert Herran Davis,
 John Francis Davis,
 Luther Day,
 Frederick Wilson Defoe,
 John Lorraine DeGroot,
 Marinus Den Herder,
 Ernest Albert Densmore,

Ann Arbor.
Niles.
Owosso.
Greensburg, Pa.
Coldwater.
Saint Louis.
Bailey.
Mackinac Island.
Algona, Ia.

Chardon, O.
Cherokee, Ia.
Muskegon.
Woodruff, Ind.
Galena, Ill.
Plainwell.
Omaha, Neb.
Kalamazoo.
Allendale, Ill.
Webberville.
Grand Rapids.
Cheboygan.
Kankakee, Ill.
Stafford, Kan.
San Diego, Cal.
Hollywood.
Richmond, Ind.
Oscoda.
Fulton.
Kansas City, Mo.
Toledo, O.
Indianapolis, Ind.
Fenton.

Kansas City, Mo.
Makawao, Hawaiian Islands.
Naugatuck, Conn.
Detroit.
San Francisco, Cal.
Canton, O.
West Bay City.
Downers Grove, Ill.
Grand Rapids.
Dansville.

Roy B. DesErnia,
Godlove Orth Dietz,
May Shoemaker Dilla,
Andrew Donovan, Jr.,
Major Alexander Downing,
Laurence LaTourette Driggs,
Joseph Henry Dunnebacke,
Harvey Stowe Durand,
Frank Hector Dusenbury,
Frederick Arnold Dustman,
Roy Arthur Dutton,
David Garfield Einstein,
Charles Edgar Elliott,
Aubert Brison English,
Arthur Erickson,
Gordon Daniel Eveland,
Edwin Faull,
William Harry Faust,
John M. Feier,
Arthur Ivan Field,
José Edward Figueras,
William Augustine Findlay,
Charles Wesley Firke,
Frank Robley Fisher,
Hervey Canfield Fisk,
Hereford Graham Fitch,
Arthur Michael FitzGerald,
Michael H. Flaherty,
James Edward Forrest,
Louis Andrew Fosse,
Edward Delos Foster,
John Murphy Foulks,
Clifton Whitfield Frazier,
Roy Clinton Freeman,
Oscar Friedrich,
Frederick Gates,
James Carleton Gaw,
Americo Sabat Geigel,
Myer Geleerd,
George Eliot Getz,
Samuel Reginald Goldsmith,
Charles Frederick Green,
Edmund Henry Griffin,

Ithaca.
Gilman, Ill.
Waterloo, Ind.
Bangor.
Indianapolis, Ind.
Ann Arbor.
Lansing.
Ann Arbor.
Mount Pleasant.
South Haven.
Aurora, Ill.
Chicago, Ill.
Indianapolis, Ind.
Callao, Mo.
McKeesport, Pa.
Mayville.
Kewanee, Ill.
Napoleon, O.
Bath.
Angola, Ind.
San Juan, Puerto Rico.
Darwson, Pa.
Mansfield, Ill.
Toledo, O.
Coldwater.
Magdalena, N. Mex.
Springfield, Ill.
Peru, Ill.
Ann Arbor.
Chicago, Ill.
Plainfield, Ill.
Sidney, Ill.
Ann Arbor.
Homer, Ill.
Ann Arbor.
Buffalo, N. Y.
Union City.
San Juan, Puerto Rico.
Toledo, O.
Marquette.
Connellsville, Pa.
Ligonier, Ind.
Blissfield.

William Arthur Grimshaw,
 Edward T. Grua,
 Herman Julius Guckenberger,
 Rafael Guillermet, A.B., *University of Barcelona*,
 Benjamin Albert Haab,
 Shirley Ray Hadley,
 Robert Emmet Haley,
 James Alexander Hamilton,
 Thomas Arthur Harbaugh,
 Hugh William Harmon,
 Kirk Hawkins,
 Earl Bedford Hawks,
 Asa Kingsbury Hayden,
 Dallas Millard Hayes,
 Herbert Franklin Hays,
 Beach Watson Haywood,
 David Orville Heater,
 Harry Harold Herzberg,
 Carl Hess,
 George James MacKay Hibbard,
 Andrew Napoleon Hildebrand,
 Frederick Borden Hill, A.B., *Harvard University*,
 Ivan Roy Hill,
 Harry Edwin Hobart,
 Clarence Sanford Holmquist,
 Silas Erle Hopkins,
 John Rutherford Hughes,
 William Charles Hunt,
 Alonzo Blair Irvine,
 Richard Saxe Jones,
 Deane Wellington Kelley,
 Charles Burton Kephart, A.B., *Gettysburg College*,
 Thomas Henry Kerns,
 John Duncan Kerr,
 Harry S. Kessler, B.S., *University of Omaha*,
 Clyde William Ketcham,
 Edward Kirchen,
 Ben Kizer,
 Donald Frank Kizer,
 George Henry Klein,
 James Chester Knight,

Pittsfield, Ill.
Roswell, S. Dak.
Cincinnati, O.
San Juan, Puerto Rico.
Chelsea.
Litchfield.
Joliet, Ill.
Williamsburg.
Monmouth, Ill.
Wolf Creek.
Ash Grove, Mo.
Dowagiac.
Cassopolis.
Bremen, Ind.
Saint Joseph, Mo.
Almont.
Arcanum, O.
Pontiac, Ill.
Chicago, Ill.
Grand Rapids.
South Bend, Ind.
 [*Brunswick.*
Saint Stephen, New Reading.
Champaign, Ill.
Salina, Kan.
Chicago, Ill.
Sioux City, Ia.
Delray.
Salt Lake City, Utah.
Mankato, Minn.
Ewart.
Taneytown, Md.
Elberton, Wash.
Calumet.
Bertha, Neb.
Dowagiac.
Lake Linden.
Spokane, Wash.
Spokane, Wash.
Carlisle, Ill.
Norway.

Cassius McClellan Knowles,	<i>Adrian.</i>
Theodore Koffel,	<i>Hatton, N. Dak.</i>
Walter Emery Lancaster, B.S., <i>Knox College,</i>	<i>Bowen, Ill.</i>
Oliver Wolcott Latham,	<i>Bellevue, O.</i>
Frank Elwyn Latta, A.B., <i>University of Iowa,</i>	<i>Washington, Ia.</i>
Clarence William Laur,	<i>Elk Rapids.</i>
Tim A. Lawler,	<i>Ypsilanti.</i>
Emert Hugh Leaton,	<i>Terry, S. Dak.</i>
Fred William Leaton,	<i>Terry, S. Dak.</i>
Harry Oscar Ledgerwood,	<i>Springfield, Mo.</i>
Gustavus Adolf Lehman,	<i>Adrian.</i>
Benjamin Franklin Leib,	<i>Goshen, Ind.</i>
Frank Kingsley Leighton,	<i>Braddock, Pa.</i>
Frank Purdy Leiper,	<i>Darlington, Pa.</i>
Theodore Lentz, B.S., <i>Northern Indiana</i>	
<i>Normal School,</i>	<i>Creal Springs, Ill.</i>
George Edward Leonard,	<i>Linden.</i>
Lawrence Lafayette Lewis, B.S., <i>Northern</i>	
<i>Indiana Normal School,</i>	<i>Marion, Ill.</i>
Guy Carpenter Lillie,	<i>Coopersville.</i>
Will Russell Lloyd,	<i>Catlin, Ill.</i>
William Lawrence Lomax,	<i>Chicago, Ill.</i>
Charles Henry Loomis,	<i>Pompei.</i>
Charles Russell Loomis,	<i>Leisure, Ind.</i>
William Arthur Love, B.S., <i>Knox College,</i>	<i>Galesburg, Ill.</i>
Roy Myron Ludlum,	<i>Saint Louis.</i>
William Lynch,	<i>Detroit.</i>
Donald Barnum McAlpine,	<i>Rapid City.</i>
Homer James McBride,	<i>Corunna.</i>
Charter Oak McCray,	<i>Ashland, O.</i>
John Francis McDonough,	<i>Naugatuck, Conn.</i>
William Clarence McHenry,	<i>Chicago, Ill.</i>
Christian Ellsworth McNemar, B. S., <i>Eureka</i>	
<i>College,</i>	<i>Lexington, Ill.</i>
Duncan McPherson,	<i>Santa Cruz, Cal.</i>
Curtis Asa Manchester, A.B., <i>Northeastern Ohio</i>	
<i>Normal College,</i>	<i>Canfield, O.</i>
Harry Dean Mann,	<i>Devew, Ark.</i>
Francis Walter Mansfield,	<i>Cassopolis.</i>
John Alfred Mansfield,	<i>Mankato, Minn.</i>
Roy Darwin Matthews,	<i>Owosso.</i>
Leonard Othello Meigs,	<i>Oakesdale, Wash.</i>
Paul Christian Meyer,	<i>Ann Arbor.</i>

- Stanley Dudley Montgomery,
 Ward Pease Montgomery,
 Albert Morris,
 Howard Hiram Morgan,
 Hiram Warren Moseley,
 Fleming Nevin,
 Lynn Sheffield Nichols,
 Leroy Northrup,
 Frank Joseph O'Brien,
 Andrew Joseph O'Connor,
 Gustavus Adolphus Ohlinger, A.B.,
 Floyd Elton Oliver,
 Lyle Burton Orr,
 William Haines Parry, B.S., *University of Penn-
 sylvania*,
 William Henry Pendell,
 Frederick Pfoff,
 George Felix Pirrung,
 Cheston Adam Price,
 Malcolm Barton Proper,
 Rolleigh Burton Ranes,
 Charles Brereton Rarden,
 Richard Charles Rau,
 Asahel Jay Read,
 John Whitcome Reynolds,
 Robert Roe Richards,
 William Janeway Richardson,
 William Addison Riner, A.B., *University of
 Southern California*,
 Joseph Lawrence Robbins,
 Charles LeRoy Robertson,
 Oran Burnam Root,
 Jesse Hart Root,
 Sandford Chandler Rose,
 J. Cumbie Ross,
 Hermann Edward Frederick Ruoff,
 Amasa Miller Rust,
 Arthur Houston Ryall,
 Elmer Bird Sanford,
 Thomas K. Schell,
 Joseph Thomas Schiappacasse, A.B., *Saint
 Mary's College*,
 Ruben Stephen Schmidt,
- Lansing.*
Aurora, Ill.
Burdett, N. Y.
Benton Harbor.
Spokane, Wash.
Sewickley, Pa.
Morrice.
Jackson.
Grand Marais.
Ottawa, Ill.
Ann Arbor.
Elm Hall.
Dwight, Ill.
Hainesport, N. J.
Saginaw.
Edmond, Okla. T.
Chicago, Ill.
Jamestown, N. Y.
Portland, Ind.
Saline.
Greenville.
Saginaw.
Fort Wayne, Ind.
Detroit.
Buchanan.
Pawnee City, Neb.
Greene, Ia.
Sac City, Ia.
Blissfield.
Petoskey.
Monroe.
Clinton.
Ann Arbor.
Pittsburgh, Pa.
Saginaw, West Side.
South Haven.
Kansas City, Mo.
Milledgeville, Ill.

Clarence Childs Schmohl,	<i>Galena, Ill.</i>
Edwin Lee Schooler,	<i>Cheyenne, Wyo.</i>
Clarence John Schroeder,	<i>Rock Island, Ill.</i>
Clinton Maranda Searl,	<i>Portsmouth, O.</i>
William Charles Seefeld,	<i>Saint Ansgar, Ia.</i>
Abram William Sempliner,	<i>Bay City.</i>
Gustavus Adolphus Shallberg,	<i>Moline, Ill.</i>
Edgar Sharp,	<i>Saticoy, Cal.</i>
Thomas Hall Shastid, A.B., <i>Harvard University,</i>	
M.D., <i>University of Vermont,</i>	<i>Battle Creek.</i>
Walter White Shaw,	<i>Kansas City, Mo.</i>
Howard Earl Shepard,	<i>Saint Joseph.</i>
Lloyd Montgomery Shepard,	<i>Saint Joseph.</i>
David John Sholes,	<i>Hampshire, Ill.</i>
John Siggins, Jr.,	<i>Tidionte, Pa.</i>
Milton Newberger Simon,	<i>Wabash, Ind.</i>
Louis George Slaughter,	<i>Coopersville.</i>
Lawrence Martin Slosson,	<i>Reed City.</i>
Albert Elwood Snow,	<i>Saginaw, West Side.</i>
Harry Algernon Souther,	<i>Ann Arbor.</i>
Almon Clark Spencer,	<i>White Sulphur Springs, Mon.</i>
Roy B. Standish,	<i>Kansas City, Mo.</i>
Robert Louis Stanley,	<i>Cadillac.</i>
Arthur Dickey Stansell, B.L.,	<i>Detroit.</i>
Gustav Stein,	<i>Kansas City, Mo.</i>
Arthur Benjamin Stern,	<i>LaPorte, Ind.</i>
Ward Alerton Stevens,	<i>Evansville, Wis.</i>
Walter Russell Stevens,	<i>Port Huron.</i>
Charles Nelson Sumner,	<i>Chicago, Ill.</i>
Arthur William Taylor,	<i>Addison.</i>
Joel Clay Taylor,	<i>Grass Lake.</i>
Verner Taylor,	<i>Addison.</i>
Daniel Tencate,	<i>Holland.</i>
Earl Dennison Thomas, Jr.,	<i>Ludington.</i>
Percy Folsom Thomas,	<i>Cassopolis.</i>
Arthur Scott Thompson,	<i>Saint Louis, Mo.</i>
Delino Henry Thompson,	<i>Bay City.</i>
Vernal Emery Thompson,	<i>Stockbridge.</i>
John William Titcomb,	<i>Mayfield, N. Y.</i>
Frank Toole,	<i>Shenandoah, Pa.</i>
Thomas Francis Touhill,	<i>Pittston, Pa.</i>
Orin George Tuttle,	<i>Ithaca.</i>
Pierce Crawford Tyrrell,	<i>Elgin, Ill.</i>

James Alexander Veasey,	<i>Jeffersonville, Ind.</i>
Robert Eugene Walker,	<i>Muskegon.</i>
Edgar Clarence Ward,	<i>Cleveland, Wash.</i>
John Anthony Ward,	<i>Sterling, Ill.</i>
Stevenson Earl Ward,	<i>Mansfield, O.</i>
George Orvil Warner,	<i>Laporte.</i>
George Crittenden Watson, Jr.,	<i>Curo.</i>
John Clinton Watson, Ph.B.,	<i>Breckenridge.</i>
Harrison Samuel Weeks,	<i>Allegan.</i>
Leon Philetus Welch,	<i>Somerset Centre.</i>
Vernon Dwight Wells,	<i>Manistee.</i>
Charles Fillmore Welsh, B.S., <i>Geneva College,</i>	<i>Beaver Falls, Pa.</i>
Daniel John Wessels,	<i>Cape Town, South Africa.</i>
John William Whaler,	<i>Bay City.</i>
Clarence Madison White,	<i>York, Neb.</i>
Hugh White, Ph.B.,	<i>Lapeer.</i>
Herbert Porter Whitney, A.B., <i>Amherst College,</i>	<i>Toledo, O.</i>
William Edmund Wider,	<i>Saginaw.</i>
Wilbur Davis Wilkin,	<i>Ann Arbor.</i>
Burt James Williams, A.B., <i>Doane College,</i>	<i>York, Neb.</i>
John Webb Willmott, A.B., <i>State College of</i>	
<i>Kentucky,</i>	<i>Lexington, Ky.</i>
Ebin Wilson,	<i>Merrill.</i>
Floyd Arthur Wilson,	<i>Ann Arbor.</i>
William Henry Wilson,	<i>Marlette.</i>
Arthur Wilford Wing,	<i>Red Wing, Minn.</i>
Eugene Hall Winkworth,	<i>Monroe.</i>
Percy Ford Wolfenden,	<i>Chicago, Ill.</i>
Luther Helm Woodward,	<i>Mount Olivet, Ky.</i>
Roscoe Tracy York,	<i>Saint Louis, Mo.</i>
Edward Russel Young,	<i>Los Angeles, Cal.</i>

SPECIAL STUDENTS.

NAME.	RESIDENCE.
Herbert Edwin Bradley, LL.B., <i>Chicago Law</i>	
<i>School,</i>	<i>Columbus, Ont.</i>
William John Brinkerhoff,	<i>Springfield, Ill.</i>
Herman Frederick Ebs,	<i>Elkhart, Ind.</i>
Leon Rufus Edmunson, B.S., <i>University of</i>	
<i>Oregon,</i>	<i>Detroit.</i>
Ambrose Augustus Featherston, Jr.,	<i>Asheville, N. C.</i>
George Everett Fink, LL.B., <i>Illinois College of</i>	
<i>Law,</i>	<i>Chicago, Ill.</i>

Robert Emmett Fitzgerald,	<i>Springfield, Ill.</i>
Walter Winfred Garnhart,	<i>Decatur, Ill.</i>
Thomas Paul Hardy,	<i>Racine, Wis.</i>
Guy J. Hely,	<i>Borden, Cal.</i>
Martin Francis Hoben,	<i>Muskegon.</i>
Edwin Murray Hulse,	<i>Fort Wayne, Ind.</i>
George John Jochem,	<i>Peoria, Ill.</i>
Matthew Joyce,	<i>Fort Dodge, Ia.</i>
Charles Kountz,	<i>Toledo, O.</i>
L. Arthur Krocher,	<i>Madison, Wis.</i>
Emil Frank Link,	<i>Chicago, Ill.</i>
Logan McKee,	<i>Pittsburgh, Pa.</i>
Edward James Marrinane,	<i>Grass Lake.</i>
Onslow Wooten Messimer,	<i>Calumet.</i>
Virgil Nash,	<i>Coldwater.</i>
Charles Peregrine Noon,	<i>Johnstown, Pa.</i>
Clarence Henry Nunneley,	<i>Mount Clemens.</i>
Andrew Olson,	<i>Moline, Ill.</i>
Horace Baxter Peabody,	<i>Detroit.</i>
Tom Corbyn Price,	<i>Saginaw.</i>
Edward Charles Rodgers,	<i>Detroit.</i>
Augustin VanDyke Rousseau, A.B.,	<i>Peoria, Ill.</i>
Russell Gruby Schulder,	<i>Vermillion, Mon.</i>
Donald Corwin Scott,	<i>Toledo, O.</i>
Herbert Leslie Standeven, LL.B., <i>Omaha</i>	
<i>School of Law,</i>	<i>Omaha, Neb.</i>
William Earl Stevens,	<i>San Diego, Cal.</i>
Lloyd Earl Thompson,	<i>Prairie Home, Ill.</i>
Lee Moxom Travis, A.B., <i>University of Oregon,</i>	<i>Detroit.</i>
Louis Wallace,	<i>Bedford.</i>
Oswald Fritz Wencker,	<i>Augusta, Mo.</i>
Charles Edward White,	<i>Canandaigua, N. Y.</i>
John Richard Wilson,	<i>Saint Louis.</i>
Daniel Wallace Woodard,	<i>Clinton, Wis.</i>

The students named below, enrolled in the Department of Literature, Science, and the Arts, also pursue studies in the Department of Law:

NAME.	RESIDENCE.
Frank Lee Buser,	<i>Cedar Rapids, Ia.</i>
Ira Alexander Campbell,	<i>Charlevoix.</i>
Francis Dwight Eaman,	<i>Detroit.</i>
Walter Seymour Foster,	<i>Lansing.</i>
Burton Otto Greening,	<i>Saint Joseph.</i>

Walter Herbert Holsinger,
Robert Milton Hopkins,
Henry Francis Jacob,
Max Emanuel Kaufman,
Abe Lowenhaupt,
Leslie Johnson Montgomery,
Carl Homer Pelton,
Thomas Linton Robinson,
George Ebbert Seney, Jr.,
Frederic Barnett Shoaff,
Herman LeRoy Stevens,
Leigh Martin Turner,
Lyford Wilson Warfield,
Leo Weiss,
Roy Church Woodworth,

Kendallville, Ind.
Louisville, Ky.
Watrousville.
Saint Louis, Mo.
Mount Vernon, Ind.
Southfield.
Oakwood.
Ravenna, O.
Toledo, O.
Fort Wayne, Ind.
Port Huron.
Battle Creek.
Des Moines, Ia.
Detroit.
Kansas City, Mo.

School of Pharmacy.

FACULTY.

- JAMES B. ANGELL, LL.D., *President*.
✓ALBERT B. PRESCOTT, M.D., LL.D., *Dean*.
✓WILLIAM H. PETTEE, A.M.
✓VOLNEY M. SPALDING, Ph.D.
✓OTIS C. JOHNSON, Ph.C., A.M.
✓PAUL C. FREER, Ph.D., M.D.
✓EDWARD D. CAMPBELL, B.S.
ALVISO B. STEVENS, Ph.C., *Secretary*.
JULIUS O. SCHLOTTERBECK, Ph.C., Ph.D.
✓MOSES GOMBERG, Sc.D.
✓GEORGE O. HIGLEY, M.S.
✓PERRY F. TROWBRIDGE, Ph.B.
✓EUGENE C. SULLIVAN, Ph.D.

Assistants.

GEORGE B. WALLACE, M.D.
FRED L. WOODS.
GEORGE M. HEATH, Ph.C.
HARRY M. GORDIN, Ph.D.

STUDENTS.

RESIDENT GRADUATES.*

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Harry Edwin Douglas, Ph.C.,	B.S.	65	<i>Paw Paw.</i>
George Millard Heath, Ph.C.,	B.S.	92	<i>Ann Arbor.</i>

*The abbreviations in the column headed **DEGREE** indicate the degree for which the student is studying. Where no abbreviation is given, the student is pursuing miscellaneous studies without being registered as a candidate for a degree. The figures in the column headed **CREDIT** indicate the number of hours of work taken prior to the beginning of the current academic year, 1899-1900, and completed without conditions, or credited on advanced standing. By an hour of work is meant the equivalent of one exercise a week for one semester. Compare page 209.

Charles Willis Johnson, Ph.C.,	B.S.	102	<i>Ann Arbor.</i>
Alice M. Stevens, Ph.C.,			<i>Evansville, Wis.</i>

UNDERGRADUATES.

NAME.	DEGREE.	CREDIT.	RESIDENCE.
Harry Albers,	Ph.C.	26	<i>Saint Louis. Mo.</i>
Glenn Mason Andrews,	B.S.		<i>Petoskey.</i>
Lyman Frederick Barlow,	Ph.C.	50	<i>Hastings.</i>
Ernest Joseph Belser,	Ph.C.	33	<i>Ann Arbor.</i>
Edwin Judson Bennett,	Ph.C.	33	<i>New Haven.</i>
Pearl Charlotte Bennett,	Ph.C.	29	<i>Ecorce.</i>
Harry Denman Berry,	Ph.C.	48	<i>Mount Sterling, Ky.</i>
Bessie Beatrice Blackburn,	Ph.C.		<i>Sault Ste. Marie.</i>
Frederic Hathaway Borradaile,			
LL.B.,			<i>Ann Arbor.</i>
Walter John Braidwood,	Ph.C.		<i>Almont.</i>
John Broene,		18	<i>Grand Rapids.</i>
Mary Liston Brown,	Ph.C.	11	<i>Saint Joseph.</i>
Christian Adam Burck,	Ph.C.		<i>Monroe.</i>
Samuel James Buzzell,	Ph.C.		<i>Waterford.</i>
Frank Deatrich Cocklin,	Ph.C.		<i>Milford, Neb.</i>
Newell Cook, B.S., <i>Albion Coll.,</i>			<i>Hanover.</i>
Charles Henry Dawson,	Ph.C.		<i>Hastings.</i>
Edgar D. DeLaMater,	Ph.C.		<i>Amsterdam, N. Y.</i>
Rafael del Valle,	Ph.C.		<i>San Juan, Puerto Rico.</i>
Thurston Nathaniel Dissosway,	B.S.		<i>Plattsburgh, N. Y.</i>
Cecil Veva Dunbar,	Ph.C.		<i>Shelton, Wash.</i>
Harold Haggard Eatough,	Ph.C.		<i>Gladstone.</i>
Charles Ralph Eckler,			<i>Elyria, O.</i>
Ben Putman Edmonds,	Ph.C.		<i>Bangor.</i>
Edgar Charles Edsill,	Ph.C.	33	<i>Jackson.</i>
Herbert William Emerson,	B.S.	33	<i>Burlington, Ont.</i>
Lemuel William Famulener,	Ph.C.	35	<i>Galesburg, Ill.</i>
John Estill Ferris,	Ph.C.	28	<i>Ann Arbor.</i>
Llewellyn Elliott Frazier,	Ph.C.	33	<i>Muskegon.</i>
Frank Leonard French,	Ph.C.	33	<i>Spring Arbor.</i>
Harry Gerber,	B.S.	32	<i>Fremont.</i>
Charles Nicholas Greusel,	Ph.C.	18	<i>Sioux City, Ia.</i>
José Guillermet, A.B., <i>Univer-</i>			
<i>sity of Barcelona,</i>	Ph.C.		<i>San Juan, Puerto Rico.</i>
Edgar Steiner Hauenstein,	Ph.C.	37	<i>Bluffton, O.</i>
George F. Hebert,		50	<i>South Lake Linden.</i>
George Delbert Hilton,	Ph.C.	26	<i>Fremont.</i>
Warren Winslow Horne,	Ph.C.	33	<i>Fayetteville, N. C.</i>

Fred Hudiburg,	Ph.C.		<i>Nordhoff, Cal.</i>
Orrin Dean Hudnutt,	Ph.C.		<i>Hanover.</i>
Jeremiah Anglim Hynes,			<i>Jam.</i>
Albert Klein,	Ph.C.		<i>Chicago, Ill.</i>
Edward Nicholas Emil Klein,	Ph.C.	33	<i>College Point, N. Y.</i>
Andrew Christian Lassen,	Ph.C.		<i>Port Huron.</i>
Emory Elias Lewis,	Ph.C.	26	<i>Rockford, Ill.</i>
Frank Morton Leslie,	Ph.C.		<i>Manito, Ill.</i>
Eugene Chauvin McConn,			<i>Fort Madison, Ia.</i>
Stanley Lawrence Marsh,	Ph.C.		<i>Gregory.</i>
John Richard Martin,	Ph.C.	38	<i>Ida.</i>
Oscar Irving Matthaui,	Ph.C.		<i>Chicago, Ill.</i>
Willis Irving Millington,	Ph.C.	18	<i>Trenton, Mo.</i>
Maude Emily Mills,			<i>Ann Arbor.</i>
John Woodford Neely,	Ph.C.		<i>Chicago, Ill.</i>
Augustus O'Brien,	Ph.C.	33	<i>Bessemer.</i>
William Alexander Pearson,	Ph.C.	18	<i>Ann Arbor.</i>
Albert Theodore Pohlmann,	Ph.C.		<i>Pierce, Neb.</i>
Nancy Ruth Reddick,	Ph.C.		<i>Niles.</i>
John Byron Reed,	B.S.		<i>Lincoln Centre, Me.</i>
Emmet Rowe,	Ph.C.		<i>Redlands, Cal.</i>
Earl Alfred Ryan,	Ph.C.	15	<i>Newberry.</i>
Robert Louis Scheldt,	Ph.C.		<i>Ann Arbor.</i>
Anna Imogene Schultz,	Ph.C.		<i>Ellenville, N. Y.</i>
Arthur Garfield Smith,	Ph.C.		<i>Winchester, Ill.</i>
George Giles Stilwell,	Ph.C.	26	<i>Jonesville.</i>
Arthur Louis Todd,	Ph.C.	33	<i>Spring Arbor.</i>
Marie Helen von Borries,	Ph.C.		<i>Louisville, Ky.</i>
Sigrid von Zellen,	Ph.C.	11	<i>Skaneec.</i>
Alfred George Walker,	Ph.C.		<i>Ann Arbor.</i>
Harold Cole Watkins,	Ph.C.		<i>Waterville, Me.</i>
Frank Holmes Whiting,	Ph.C.	38	<i>Union City.</i>
Frank Allen Williams,	Ph.C.		<i>Ionia.</i>
Frank Yott, Jr.,	Ph.C.	38	<i>Midland.</i>

Flora Luella Goeschel, *Bay City*, enrolled in the Department of Literature, Science, and the Arts, is also pursuing studies in the School of Pharmacy.

Homœopathic Medical College.

FACULTY.

JAMES B. ANGELL, LL.D., *President.*
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OSCAR LESEURE, M.D.
ROYAL S. COPELAND, A.M., M.D., *Secretary.*
WILLIS A. DEWEY, M.D.
CLAUDIUS B. KINYON, M.D.

Assistant.

RAYMOND A. CLIFFORD, M.D.

Non-Resident Lecturers.

OSCAR R. LONG, M.D., *Mental and Nervous Diseases.*
WILLIAM A. POLGLASE, M.D., *Theory and Practice of Medicine
and Nervous Diseases.*

STUDENTS.

RESIDENT GRADUATES.

NAME.	RESIDENCE.
Raymond Alfred Clifford, M.D., M.D., <i>Jefferson Medical College,</i>	<i>Wadsworth, O.</i>
Fred Alvord Miner, M.D.,	<i>Fresno, Cal.</i>
Dean Wentworth Myers, M.D.,	<i>Muir.</i>
Harry Melvin Piper, M.D.,	<i>Denver, Ind.</i>
Floyd Edward Westfall, M.D.,	<i>Niles.</i>

FOURTH YEAR STUDENTS.

NAME.	RESIDENCE.
Russell Ebenezer Atchison,	<i>Salem.</i>
Theodore Bacmeister, Jr., A.B.,	<i>Toulon, Ill.</i>
John Rutherford Ballah,	<i>Aylmer, Ont.</i>
William Henry Belknap,	<i>Greenville.</i>

Homer Stephen Carr,	<i>Winchendon, Mass.</i>
Grace Arvilla Banks Carter,	<i>Greene, N. Y.</i>
William Asbury Chapman,	<i>Niles.</i>
Charles Wesley Edmunds,	<i>Ann Arbor.</i>
Mina Bianca Gaut,	<i>Dawson, Pa.</i>
Paul Eber Norman Greeley,	<i>Waterman, Ill.</i>
Scott Fraser Hodge,	<i>Plymouth.</i>
Alice Lavinia Kimball,	<i>Newburyport, Mass.</i>
George Eldridge Mann,	<i>Hudson.</i>
Harry Darwin Obert,	<i>Jackson.</i>
Pauline Rundell Wilson,	<i>Tecumseh.</i>

THIRD YEAR STUDENTS.

NAME.	RESIDENCE.
Herbert Rodney Allen,	<i>Ann Arbor.</i>
Overton William Bradley,	<i>Ottawa, Ont.</i>
Archie D. Carpenter,	<i>Cadillac.</i>
Edgar Clarence Dunning, A.B., <i>Albion College,</i>	<i>Albion.</i>
Albertus Taibae Hoxie,	<i>Traverse City.</i>
Francis Hebron Husband,	<i>Palgrave, Ont.</i>
Thomas Richard McHugh,	<i>Bay City.</i>
James McKee,	<i>Laingsburg.</i>
Arthur Selwyn Moore,	<i>Bay City.</i>
Gilbert Roy Owen,	<i>Saint Albans, Vt.</i>
†Flora May Phelps,	<i>Plainfield, N. J.</i>
Carl Frost Raver,	<i>Dallas City, Pa.</i>
George Anthony Robertson,	<i>Battle Creek.</i>
William Theodore Rowley,	<i>Maple Rapids.</i>
Joseph Scheidler,	<i>Owosso.</i>
Evelyn Scott,	<i>Detroit.</i>
Joaquin Mokelumne Stevens, A.B., <i>Toronto</i>	
<i>University,</i>	<i>Chatham, Ont.</i>
Nelson Walter Thompson, B.S.,	<i>Detroit.</i>
Clarence Mason Williams,	<i>Flint.</i>

SECOND YEAR STUDENTS.

NAME.	RESIDENCE.
Harley Armand Haynes,	<i>Saint Albans, Vt.</i>
Harry Lyman Imus,	<i>Ann Arbor.</i>
Carl Emil Johnson,	<i>Westville, Ind.</i>
George Cantwell Lamb,	<i>Ann Arbor.</i>
Elmer William Little,	<i>Belding.</i>
Roy Joseph Pelton,	<i>Oakwood.</i>
Fred Johnson Schulz,	<i>Fort Wayne, Ind.</i>
Ellis David Walker, B.S.,	<i>Saline.</i>

FIRST YEAR STUDENTS.

NAME.	RESIDENCE.
Oliver R. Austin,	<i>Chesaning.</i>
Edwin George Henry Beck,	<i>Rochester, N. Y.</i>
Edwin Scott Blair,	<i>Grand Haven.</i>
Elmore A. Monroe Book,	<i>Pinckney.</i>
Fred J. Bowen,	<i>Haskinville, N. Y.</i>
Walter Scott Brockway,	<i>Bay City.</i>
William Don Brooks,	<i>Ann Arbor.</i>
Obed Cooley,	<i>Tottenville, N. Y.</i>
May Hannah Cravath, A.B., <i>University of</i>	
<i>North Dakota,</i>	<i>Saint Charles, Minn.</i>
Frank San Francisco Delaney,	<i>Ann Arbor.</i>
Nannie Roberta Dillon,	<i>Paw Paw.</i>
William Eck Doran,	<i>Colon.</i>
Hugh Berkey Harter,	<i>Goshen, Ind.</i>
Adolph Ernest Ibershoff,	<i>Saginaw.</i>
Cornelius D. Mulder, A.B., <i>Hope College,</i>	<i>Spring Lake.</i>
Arthur Justice Reynolds,	<i>Grand Haven.</i>
Joseph Albert Robinson,	<i>South Lyon.</i>
Carl John Rollman,	<i>Ann Arbor.</i>
Guy Burwell Stall,	<i>North Jackson, O.</i>
Elmer Leroy Whitman,	<i>Corunna.</i>
Archie B. Wickham,	<i>Chesaning.</i>
Gustave Wilson,	<i>Escanaba.</i>
Erastus R. Zimmerman,	<i>Medina, N. Y.</i>

College of Dental Surgery.

FACULTY.

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DAVID M. LICHTY, M.S.
LOUIS P. HALL, D.D.S.
CYRENUS G. DARLING, M.D.

Demonstrators and Assistants.

ROBERT B. HOWELL, D.D.S.
CHARLES W. JOHNSON, Ph.C.
HENRY W. HARVEY, D.D.S.
HARRIE N. COLE.
CHARLES M. BRIGGS.

STUDENTS.

SENIORS.

NAME.	RESIDENCE
William Leroy Ainsworth,	<i>Flint.</i>
Floyd Henry Austin,	<i>Norvell.</i>
Bostwick Barnes, A.B., <i>Ohio Wesleyan Univ.,</i>	<i>San Diego, Cal.</i>
Harry Ostrom Barnes,	<i>Allegan.</i>
Marie Becker,	<i>Berlin, Germany</i>
Raymond Henry Bedell,	<i>Zanesville, O.</i>

Clayton William Beistle,
 Harry Cameron Benson,
 Thomas Ross Braden,
 Charles Morehead Briggs,
 Clarence Henry Burton,
 George Wood Clapp,
 Albert George Coggin,
 David Gilbert Colwell,
 Archer Willis Cook,
 Walter James Cook,
 Norton Dusenbury Coons, M.D.,
 John Corpron,
 Wesley John Davis,
 Berkley Albert Deyoe, LL.B.,
 Thomas Davidson Dow,
 Herbert Egbert Gerber,
 Vern Austin Goodrich,
 Artemas Blake Gray,
 Hugh Thomas Gundry,
 Charles Glazier Hampton, Jr.,
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 Marvin Houghton,
 George Austin Howlett,
 Robert Courtney Hunt,
 William Luther Hurd,
 James Herbert Jones,
 Bernard J. Keenan,
 Melville Arthur Kendrick,
 William Webster Kimmel,
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 Pearl John Ludington,
 Donald Mayhew McCall,
 John Frank Martin,
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 Charles Emerson Mercer,
 Benjamin Franklin Miller, Jr.,
 Benjamin John Miller,
 Lulu Ella Mitchell,
 Ernest Henry Monroe,
 Lorne Ross Moodie,

Buchanan.
Laingsburg.
Washington Court House, O
San Diego, Cal.
Detroit.
Denver, Col.
Lake Linden.
Fenton.
Grand Blanc.
Ann Arbor.
Mount Pleasant.
Ann Arbor.
Salt Lake City, Utah.
Zanesville, O.
Caro.
Saginaw, West Side.
Grand Haven.
Geneseo, N. Y.
Grand Blanc.
Detroit.
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Ann Arbor.
Houghton.
Eaton Rapids.
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Hogansburg, N. Y.
Port Huron.
Kendallville, Ind
Menominee.
Bangor, Me.
Waterman, Ill.
Detroit.
Sand Beach.
Flint.
Ann Arbor.
Seville, O.
Hamburg.
Flint.
Negaunee.
Cadillac.
Flint.
West Superior, Wis.

Frank Eugene Morse,	Norwalk, O.
Aldro Leroy Munn,	Eaton Rapids.
Marie Louise Pagelsen,	Grand Haven.
Robert Larimar Park,	Evans, Col.
James J. Perry,	Fenton.
Leo Benjamin Plummer, B.S., <i>Mich. Agr. Coll.</i> ,	Ganges.
William Claudius Puffenberger,	Eaton Rapids.
Elsa Schultz-Hopf,	Hamburg, Germany.
Uriah Wilton Smith,	Battle Creek.
John Charles Snelling,	Elsie.
Harry Francis Spence,	Dowagiac.
Augustus L. Steger,	Chelsea.
George Benson Stewart,	Grand Haven.
John Edward Stoffer,	Williamston.
Albert Raphael Thomas,	Jackson.
Mabel Tibbott,	Ann Arbor.
Elbert John Tower,	Ionian.
Fred Frisbee Vandercook,	Deer Creek.
Robert Misson Van Duzer,	Bangor.
Lee Adelbert Watling,	Ypsilanti.
James Robert Watson,	Opechee.
Oswald Whalley,	Hart.
Garrett Oliver Wright,	Willis.

JUNIORS.

NAME.	RESIDENCE.
Herbert Edward Anthony,	Brampton, Ont.
Herbert Walter Barton,	Akron, O.
Clark Lee Belnap,	Eaton Rapids.
Jesse Alwood Benner,	Defiance, O.
Guy Blencoe,	Alma Centre, Wis.
Ottillie Borck,	Stettin, Germany.
Clarence Charles Bowen,	Cadillac.
Ralph Allen Bowie,	Vicksburg.
Nelson Amos Burr, M.D., <i>Columbus Medical College</i> ,	Holyoke, Mass.
Fred Ray Cady,	Ithaca.
Irving Dallas Carpenter, B.S.,	Battle Creek.
Edward Ivan Challis,	Laingsburg.
Charles Hedgers Chamberlain,	Ranelagh, Ont.
Thomas Ignatius Clark,	Chelsea.
S Erwin Conklin,	Tecumseh.
Clarence Edward Curtis,	Shell Lake, Wis.

Robert Curtis,
Theo Rothwell Dodsley,
Henry Shute Downing,
Uelon Joseph Dunwell,
George Albert Fead,
William Warren Fitch,
John Henry Fleming,
Henny Fortmann,
Thomas Jay Fritz,
Frederick Aloysius Gill,
Guy Leroy Gillett,
Alexander Fulton Gordon, M.S., *Michigan*
Agricultural College,
Herbert Hawley,
Jay Alvin Heidbrink,
Frederick Burgess Holcomb,
James Wendell Inglis,
Lewellyn Woodard Jordan,
Roy Greenwood Joslin,
Charles Frederick Keyser,
Frank Martin Lamb,
Oel Elon Lanphear,
Herbert Lowes, •
John Leonard Lyon,
Thomas Maurice McClure,
Sidney Gould Main,
Clare Charles Markey,
Edward Allan Marsland,
Karl John Martindale,
Stuart Anthony Merse,
John William Mieras,
Walter Franklin Monkman,
James William Monks,
Walter Edington Moore,
Ward Moore,
Rolland Herbert Neelands,
Clarence Gardner Parker,
Albert John Parsal,
Fred Clarence Phelps,
Autie Reinking,
Addison Baker Robinson,
Justus Elisha Rogers,
Leslie Frank Rutter,

Jackson.
Ann Arbor.
San Diego, Cal.
Grand Rapids.
Lexington.
Lakeview, Cal.
Wildfield, Ont.
Hamburg, Germany.
Caro.
Grand Rapids.
Lake City, Minn.
Lansing.
Ann Arbor.
Union Grove, Wis.
Ripley, N. Y.
Columbus, Wis.
Kent's Hill, Me.
Big Rapids.
Baraboo, Wis.
Ann Arbor.
Paw Paw.
Drayton, Ont.
Lansing.
East Liverpool, O.
Midland.
Port Huron.
Wyecombe, Ont.
Fulton, Ill.
Vicksburg.
Grand Haven.
Watford, Ont.
Pinckney.
Saginaw.
Freeport.
Sandhill, Ont.
Mount Clemens.
Benton Harbor.
Merrillan, Wis.
Baraboo, Wis.
Grand Rapids.
Ann Arbor.
Mount Clemens.

Leo Tolly Sauerbraun,
 Albert Frederick Schatzel,
 Pearl Andrew Schenck,
 John Jameson Scott,
 Chauncey George Smith,
 Percy Clinton Squiers,
 Frank L. Stegeman,
 Frank George Swartz,
 John Henry Harrison Sweer,
 Charles Herbert Tannehill,
 Arthur William Tatham,
 Thomas Walter Thirlby,
 Justin Timothy Tuomy,
 Ervin Stephen Ulsaver,
 Neil Davis Vedder,
 William Fisler Vernor,
 Edmund Daniel Vince,
 William John Walsh,
 Leon Wheeler,
 Forrest Lyman Williams,
 Albert Crosswell Wilson,
 Henry Clay Wood,
 Willis Briggs Woodruff,

Galion, O.
Fostoria, O.
Cass City.
Geneseo, N. Y.
Brooklyn.
Flint.
Allegan.
Ypsilanti.
Fort Wayne, Ind.
Hicksville, O.
Saginaw.
Traverse City.
Ann Arbor.
Albion.
Carrollton, Ill.
Hillsdale.
Battle Creek.
Ann Arbor.
South Haven.
Ludington.
Ann Arbor.
Chelsea.
Ann Arbor.

FRESHMEN.

NAME.	RESIDENCE.
Ernest George Abernethy,	<i>Chase Mills, N. Y.</i>
John Frederick Allen,	<i>Chesaning.</i>
William Roy Alvord,	<i>Battle Creek.</i>
Frank P. Amo.	<i>Alma Centre, W. I.</i>
Francis Gordon Anspach,	<i>Ann Arbor.</i>
Thomas Adelbert Bamborough,	<i>Ann Arbor.</i>
George Arthur Bell,	<i>Chatham, Ont.</i>
Russell Welford Bunting,	<i>Ann Arbor.</i>
John Oscar Butler,	<i>Buchanan.</i>
Henry Judson Buttolph,	<i>Pontiac.</i>
Edward Beach Caldwell,	<i>Ann Arbor.</i>
Ralph Aretus Calkin,	<i>Montague.</i>
James Rolland Cannan, B.S., <i>Tri-State Normal</i>	
<i>College,</i>	<i>Montpelier, O.</i>
Fred Martin Capron,	<i>Akron, O.</i>
George Chalmers,	<i>Pittsfield.</i>
Agnes Ethelberta Chubb,	<i>Ann Arbor.</i>

Charles Jeffrey Colling,
 Carl Patterson Conn,
 Willard Clarence Creath,
 Walter Leon Crego,
 Frank Leo Cunningham,
 Lewis Ward Curtis,
 William Dick,
 William Frederick Dodsley, LL.B.,
 Arthur Farrington Douglas,
 Maurice Rogers Douglass,
 William Thomas Easton,
 Frederick Taylor Evans,
 John Boggs Felker,
 Richard Roy France,
 Perry Layfield Fritz,
 William Fuller Gates,
 Robert Bruce Gatiss,
 Frederick Domic Haller,
 Wilfred Morgan Hawkins,
 Charles Adams Hawley,
 Cyrus B. Hayner,
 George Godfrey Herr,
 Fred Louis Herrmann,
 William Stuart Holmes,
 Harold Lee Howver,
 Bertrand John Howlett,
 Willis Scott Howlett,
 Matthew Edward Kearney,
 William Charles Fred Kinietz,
 Joseph Henry Kirby,
 Stanley Morris Kirby,
 Harry Gardner Kittell,
 Arthur B. Lawson,
 Harrold Byron Lehner,
 Arthur William Lewis,
 Carlos Joseph Light,
 Willis Albert Little,
 Louis Owen Ludlum,
 J. Bain Mc Gilvray,
 George Malcom Madden,
 Claude Emmery Markey,
 Charles William Miller,
 Allan Singleton Moore,

Columbia.
 Ann Arbor.
 Toledo, O.
 Napoleon.
 Ann Arbor.
 Rochester.
 Calumet.
 Ann Arbor.
 Hastings, Neb.
 Chateaugay, N. Y.
 Dowagiac.
 Ann Arbor.
 Ann Arbor.
 Decatur, Ind.
 Caro.
 Ann Arbor.
 Eagle River.
 Defiance, O.
 Peterboro, Ont.
 Ann Arbor.
 Fowlerville.
 Waterbury, Conn.
 Ann Arbor.
 Detroit.
 Gibson City, Ill.
 Ann Arbor.
 Ann Arbor.
 Ann Arbor.
 Lapeer.
 Grand Haven.
 Hillsdale.
 Stephentown, N. Y.
 Howell.
 Kalkaska.
 Leonard.
 Calumet.
 Cannonsburg.
 Saint Louis.
 Ann Arbor.
 Ann Arbor.
 Port Huron.
 Chelsea.
 Fredonia, N. Y.

Hugh Neelands,	<i>Sandhill, Ont.</i>
Arthur John Norman,	<i>Lexington.</i>
Lura Francis Owen,	<i>Battle Creek.</i>
Harry Oliver Quackenbush,	<i>Ludington.</i>
Fred Sterner Randles,	<i>Adrian.</i>
Shirley Abb Randolph,	<i>Battle Creek.</i>
Orrin Riemenschneider,	<i>Chelsea.</i>
Eldred George Robbins,	<i>Ishpeming.</i>
Alpha Don Rogers,	<i>Grass Lake.</i>
Guy Porter Saville,	<i>Joliet, Ill.</i>
Rudolph J. Siegmund,	<i>Huntington, Ind.</i>
Maurice G. Skinner,	<i>Ann Arbor.</i>
Andrew Gregor Smith,	<i>Claude, Ont.</i>
Clora J. Snideman,	<i>North Manchester, Ind.</i>
Ernest Edgar Snow,	<i>Paw Paw.</i>
Frank Rutherford Snow,	<i>Kalamazoo.</i>
William Fred Spies,	<i>Norwalk, O.</i>
George Albert Stegeman,	<i>Allegan.</i>
James Robert Stewart,	<i>Coldwater.</i>
Edwin Freeman Swinehart,	<i>Defiance, O.</i>
Clarence George Taylor, M.E., <i>Worcester Poly-</i>	
<i>technic Institute,</i>	<i>Pittsfield.</i>
Louis Frederick Theurer,	<i>Montague.</i>
Henry Wensel Tobias,	<i>Wilson, Kan.</i>
Frank Vandeburg,	<i>Ypsilanti.</i>
Vern Van Fossen,	<i>Paw Paw.</i>
Otto Clement Vogeli,	<i>Bremen, Ind.</i>
Marcus Llewellyn Ward,	<i>Plainfield.</i>
Louis Gordon Watkins,	<i>Milford.</i>
Charles Morris Welch,	<i>Decatur.</i>
William Henry Weybright,	<i>Jamton, O.</i>
Jonathan Charles Whatley,	<i>Battle Creek.</i>
Harry Seymour White,	<i>Benton Harbor.</i>
Frank Henry Wilkinson,	<i>Atwood.</i>
Leonard Alfonzo Williams,	<i>Joliet, Ill.</i>
Eric Zincke,	<i>Chelsea.</i>

Summer Schools of 1899.

IN THE DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS, AND
IN THE DEPARTMENT OF LAW.

STUDENTS.

NOTE.—Italic letters following a name show that the student is attending the University in the year 1899-1900, and is enrolled in the department indicated:—*a* denoting Department of Literature, Science, and the Arts; *e*, Department of Engineering; *m*, Department of Medicine and Surgery; *l*, Department of Law; *p*, School of Pharmacy; *h*, Homœopathic Medical College; *d*, College of Dental Surgery. The letter *G* shows that the student was working under the direction of the Administrative Council of the Graduate School.

Department of Literature. Science, and the Arts.

NAME.	RESIDENCE.
Carl Nelson Adams, <i>a</i> ,	<i>Detroit.</i>
George Henry Anderson, <i>e</i> ,	<i>Battle Creek.</i>
Ralph Clark Apted, <i>a</i> ,	<i>Grand Rapids.</i>
Aikman Armstrong, <i>e</i> ,	<i>Detroit.</i>
Mattie Eveline Auletta,	<i>Toledo, O.</i>
Warren Babcock, B.S., <i>Michigan Agricultural College,</i>	<i>Agricultural College.</i>
Anna May Bailey, B.L.,	<i>Ridgeway.</i>
James William Bannon, Jr.,	<i>Portsmouth, O.</i>
Andrew Silvestre Barada,	<i>Saint Louis, Mo.</i>
John Ghio Barada, <i>a</i> ,	<i>Saint Louis, Mo.</i>
Welden Fairbanks Barnes,	<i>Fenton.</i>
Roland Bruce Barrett, <i>a</i> ,	<i>Chicago, Ill.</i>
Margaret Emily Barry,	<i>Middletown, O.</i>
Angie Bates,	<i>Detroit.</i>
Thomas Leland Baxter, B.L., <i>Hiram College,</i>	<i>Fayette, O.</i>
John Henry Beckert, <i>a</i> ,	<i>Saint Louis, Mo.</i>
Howell Llewellyn Begle, <i>a</i> ,	
Pearl Charlotte Bennett, <i>p</i> ,	
George Nelson Bentley, <i>a</i> ,	

Esther Theo Berglund,	Moline, Ill.
John Knight Munro Berry, <i>a</i> ,	Cedar Rapids, Ia.
Robert Worth Bingham, LL.B., <i>University of</i> <i>Louisville,</i>	Louisville, Ky.
Howard Berkey Bishop, <i>a</i> ,	Ann Arbor.
Ruth Ellen Blackman, <i>a</i> ,	Rochelle, Ill.
Mabel Elizabeth Blackney,	Clio.
Jeannette Blanchard, <i>a</i> ,	Mironk, Ill.
Ella Mary Bockway,	Springfield, O.
Helen Margaret Bogardus,	Saginaw.
Ottillie Borck, <i>d</i> ,	Stettin, Germany.
Carrie A. Bower,	Tyrone.
Elmer Leroy Bower,	Fairfield Centre, Ind.
Walter Channing Boynton,	Detroit.
Helen Brigham,	Muscatine, Ia.
Florence Brown,	Reed City.
Helena Aloysia Brown, <i>a</i> ,	Port Huron.
Katharine Holland Brown, B.L.,	Quincy, Ill.
Effie Buck,	Kansas City, Mo.
Cletus Bush,	Flint.
Agnes Ophelia Cady, <i>a</i> ,	Ann Arbor.
Harriet May Campbell,	Centreville.
Herbert Porter Carrow, <i>a</i> ,	Ann Arbor.
Minnie Cecilia Cassidy, <i>a</i> ,	Chelsea.
Elma Chandler, <i>a</i> ,	Greenville.
Andrew B. Christenson, <i>a</i> ,	Gunnison, Utah.
George Wentworth Clark, <i>m</i> ,	Maumee, O.
Arthur Clarence Cole,	Grand Rapids.
Allen Lysander Colton, A.M., <i>G</i> ,	Ann Arbor.
Albert Perry Cook, A.M., <i>Adelbert College,</i>	Ithaca.
Obed Cooley,	Tottenville, N. Y.
Frederick James Corl,	Louisville, Ky.
George William Cottrell,	Detroit.
Dick Jay Crosby, B.S., <i>Michigan Agricultural</i> <i>College,</i>	Agricultural College.
Louise Cunningham,	Marion, O.
Winifred Campbell Daboll, <i>a</i> ,	Saint Johns.
Catherine Teresa Darmody,	Marion, O.
Minna Caroline Denton, <i>a</i> ,	Fort Smith, Ark.
Thomas Patrick Detamore,	Junction City, Kan.
Alice Rose Dewey, Ph.B., <i>Hillsdale College,</i>	Elkhart, Ind.
Sarah Eleanor Dudley,	Louisville, Ky.
Irene Anne Duffy, <i>a</i> ,	Ann Arbor.

Helen Dunham, <i>a</i> ,	<i>West Bay City.</i>
Jennie Logere Dupuis,	<i>Oak Park, Ill.</i>
John William Dwyer, J.L.M.,	<i>Ann Arbor.</i>
Annette Marie Dye,	<i>Muskegon.</i>
Sue Erb,	<i>Muscatine, Ia.</i>
Alice Priest Ewell,	<i>Washington, D. C.</i>
Ervin Edgar Ewell, Ph.C.,	<i>Washington, D. C.</i>
David Fell,	<i>Detroit.</i>
Ingeborg Sophia Fredlund, <i>a</i> ,	<i>Ann Arbor.</i>
Florence Amelia Futier,	<i>Flint.</i>
Adda Rhodes Garrison,	<i>Kent, O.</i>
Charlotte Gerken, <i>a</i> ,	<i>Ann Arbor.</i>
Louise Rosseel Gibbs,	<i>Detroit.</i>
Marguerite Gibson, <i>a</i> ,	<i>Chicago, Ill.</i>
Harry Wilson Gilmore, Ph.B., <i>Penn College,</i>	<i>Oskaloosa, Ia.</i>
Norman Sherk Gingrich,	<i>Elkhart, Ind.</i>
Henry Newell Goddard, Ph.B.,	<i>Oshkosh, Wis.</i>
Clara Adele Goheen,	<i>Saint Joseph, Mo.</i>
Raymond Gould,	<i>Perrinton.</i>
Philip Emanuel Graber, M.S., <i>National Normal</i>	
<i>University, a</i> ,	<i>Genoa, O.</i>
Earl Ralph Lamont Gregg,	<i>Ann Arbor.</i>
Marie Greiderer, <i>a</i> ,	<i>Dundee.</i>
Orel S. Groner,	<i>Manistique.</i>
Howard Judson Hall, B.S., <i>Mich. Agr. Coll.,</i>	
<i>A.B., Leland Stanford, Jr., University,</i>	<i>Tucson, Ariz.</i>
Florence Mabelle Halleck, Ph.M.,	<i>Coldwater.</i>
Norman Follett Harriman, <i>a</i> ,	<i>Ann Arbor.</i>
Lulu Caroline Harrison,	<i>Saginaw.</i>
Joseph Lewis Harter, A.B., <i>Indiana University, I,</i>	<i>Flora, Ind.</i>
Frank Arthur Hatch, <i>a</i> ,	<i>Detroit.</i>
Charles Frederic Hately, <i>a</i> ,	<i>Irondale, O.</i>
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Department of Law.

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Claude Youatt Andrews, A.B., <i>Franklin College, l,</i>	<i>Dana, Ind.</i>
Robert Worth Bingham, LL.B., <i>University of Louisville,</i>	<i>Louisville, Ky.</i>
Ulysses Sherman Brandt,	<i>Columbus, O.</i>
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William Watkins Davies,	<i>Louisville, Ky.</i>

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Ernest Franklin Ferree, B.S., <i>National Normal University, I</i> ,	<i>Pasco, O.</i>
Andrew Jackson Freeborn, <i>I</i> ,	<i>Washington, Kan.</i>
Charles Albert Frueauff, <i>I</i> ,	<i>Denver, Col.</i>
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Summary of Students.

DEPARTMENT OF LITERATURE, SCIENCE, AND THE ARTS.

Holders of Fellowships	3
Resident Graduates	83
*Candidate for an Advanced Degree, enrolled in the Department of Law	1
Graduates Studying <i>in Absentia</i>	3
Undergraduates:	
Candidates for a Degree	1101
Students not Candidates for a Degree	152—1343

DEPARTMENT OF ENGINEERING.

Resident Graduates	4
Graduates Studying <i>in Absentia</i>	3
Undergraduates	273—280

DEPARTMENT OF MEDICINE AND SURGERY.

Resident Graduates	7
Fourth Year Students	96
Third Year Students	90
*Second Year Students	124
First Year Students	161
*Students enrolled in other Departments of the University:	
Second Year Students in Medicine	12
First Year Students in Medicine	10—500

DEPARTMENT OF LAW.

Resident Graduate	1
Third Year Students	231
Second Year Students	220
First Year Students	326
Special Students	39
*Students enrolled in the Department of Literature, Science, and the Arts	20—837

*Included in the Summary by States on pages 372 and 373 only in the Department in which they are enrolled.

SCHOOL OF PHARMACY.

Resident Graduates	4
Undergraduates:	
Candidates for a Degree	63
Students not Candidates for a Degree	8
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HOMŒOPATHIC MEDICAL COLLEGE.

Resident Graduates	5
Fourth Year Students	15
Third Year Students	19
Second Year Students	8
First Year Students	23— 70

COLLEGE OF DENTAL SURGERY.

Seniors	72
Juniors	81
Freshmen	94— 247

	3353
Deduct for names counted more than once	50
Total, exclusive of Summer Schools	3303

SUMMER SCHOOLS OF 1899.

In Department of Literature, Science, and the Arts	218
In Department of Law	45—263
†Deduct for students enrolled in 1899-1900 in some department of the University	124
Deduct for name counted twice	1—125— 138
Grand total	3441

*See foot note on page 372.

†Not included in the Summary by States.

SUMMARY BY STATES AND BY DEPARTMENTS.

	Lit. Dept.	Engineering	Med. and Surg	Law	Pharmacy	Homoeopathic	Dental	Summer Schools	Total
Michigan	916	208	235	323	44	44	169	70	*2009
Illinois	147	27	30	130	7	2	6	7	†356
Ohio	70	7	45	56	2	2	18	15	215
Indiana	38	3	20	49	—	4	6	9	129
New York	21	9	35	13	4	5	8	2	97
Iowa	32	5	12	32	2	—	1	10	94
Pennsylvania	17	2	20	34	—	2	—	2	77
Missouri	21	2	7	27	2	—	—	5	64
Wisconsin	6	3	10	9	1	—	9	2	40
California	5	1	1	18	2	1	5	—	33
Minnesota	15	3	5	6	—	1	1	1	32
Kansas	10	—	4	14	—	—	1	1	30
Nebraska	3	—	5	11	2	—	1	—	22
Colorado	6	3	2	7	—	—	2	1	21
Utah	2	2	1	12	—	—	1	1	19
Kentucky	1	1	1	6	2	—	—	4	15
Washington	4	—	1	9	1	—	—	—	15
Massachusetts	3	—	5	1	—	2	1	—	12
North Dakota	2	—	6	3	—	—	—	1	12
Montana	1	—	1	6	—	—	—	1	9
Vermont	1	—	3	3	—	2	—	—	9
Connecticut	2	—	1	3	—	—	1	—	7
Maine	—	—	2	1	2	—	2	—	7
New Jersey	1	—	3	2	—	1	—	—	†7
Puerto Rico	—	—	—	5	2	—	—	—	7
North Carolina	1	—	2	2	1	—	—	—	6
Tennessee	2	—	2	2	—	—	—	—	6
Texas	1	1	—	2	—	—	—	2	6
South Carolina	—	—	2	3	—	—	—	—	5
South Dakota	1	—	1	3	—	—	—	—	5
Oklahoma Territory	1	—	1	2	—	—	—	—	4
Rhode Island	—	—	1	3	—	—	—	—	4
Arkansas	1	—	—	2	—	—	—	—	3
District of Columbia	1	—	—	—	—	—	—	2	3
Georgia	—	1	2	—	—	—	—	—	3
Idaho	1	—	—	2	—	—	—	—	3
New Mexico	—	—	1	2	—	—	—	—	3
Alabama	1	—	1	—	—	—	—	—	2
Hawaiian Islands	—	—	—	2	—	—	—	—	2
Indian Territory	2	—	—	—	—	—	—	—	2
Maryland	1	—	—	1	—	—	—	—	2

*Deduct 3 for names counted twice.

†Deduct 2 for names counted twice.

‡Deduct 1 for name counted twice.

Mississippi	—	—	1	1	—	—	—	—	2
Virginia	—	—	1	1	—	—	—	—	2
West Virginia	—	—	—	1	—	—	—	1	2
Wyoming	—	—	—	2	—	—	—	—	2
Arizona	—	—	—	—	—	—	—	1	1
Florida	—	—	—	1	—	—	—	—	1
New Hampshire	—	—	1	—	—	—	—	—	1
Oregon	—	—	—	1	—	—	—	—	1
Ontario	—	—	2	1	1	4	11	—	19
Japan	4	—	2	1	—	—	—	—	7
Germany	—	—	—	—	—	—	4	—	4
Mexico	—	2	—	—	—	—	—	—	2
South Africa	1	—	—	1	—	—	—	—	2
China	—	—	1	—	—	—	—	—	1
Egypt	—	—	1	—	—	—	—	—	1
New Brunswick	—	—	—	1	—	—	—	—	1
Turkey	—	—	1	—	—	—	—	—	1
Total	1342	280	478	817	75	70	247	138	*3447

*Deduct 6 for names counted twice.

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